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288 PAGES

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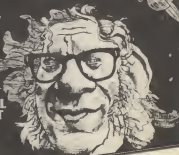
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EDITORIAL: SCIENCE FICTION ANTHOLOGIES

by Isaac Asimov

art: Frank Kelly Freas

I hear it said now and then that the short story is a lost literary art form, that the magazines and various outlets that fostered the short story are dead and gone, that fiction today concentrates on the novel.

That would be too bad if it were true; but, of course, it isn't entirely true. In the field of science fiction, at least, the short story absolutely flourishes and the readers simply can't get enough of it. Indeed, any good science-fiction story can count on periodic resurrection in the form of items in single-author collections and in multi-author anthologies. Some of my stories have been anthologized up to thirty times, and I by no means hold the record for such things. I suspect that both Ray Bradbury and Harlan Ellison (to name but two) can cite stories of their own that have seen far more repetitions than any of mine have.

And there you have something that is oddly characteristic of science fiction—the vast number and varying nature of anthologies in the field. I have the impression that there is no precedent in literature for this.

Why is it so? Why should science fiction, rather than some other subsection of popular literature, spawn an unending series of anthologies of enormous variety?

I suspect that, in part at least, what is responsible is the unusual fervor of the devoted science-fiction reader. Particular stories strike such a reader with the force of a sledgehammer. Combine this with the fact that magazine science fiction tends to be ephemeral. Few young readers save the magazines for long. Even if they start a collection, after a few years there comes college or marriage or other interests generally; and the collection falls apart, drifts away, vanishes.

Yet the memory of those particularly good stories lingers, and a glow of glory builds about them. I have long lost count of the number of letters I have received from readers who tell me that once, when the world was young, they read a story about thus-and-so. They can't



remember the title, the author, where it appeared or anything more than thus-and-so; but could I tell them what the story was and how they could go about finding it again?

Sometimes I remember the story from the small clues they present and can give them the missing information. More often I cannot.

You see, then, that anthologies offer a second chance. They sometimes bring back for readers stories once loved and then lost. Once I deliberately devised an anthology (*Before the Golden Age*, Doubleday, 1974) in order to present some stories that I myself had loved and lost.

Sometimes such stories are better not found, for they don't, in actual fact, bear the prismatic colors that fond memory lends them; but sometimes they do. When I reread "Tumithak of the Corridors" during the preparation of my 1974 anthology, I found it to be a time machine that restored me to my teenage years for an hour or two.

The first anthology of magazine science fiction appeared in 1943. It was *The Pocket Book of Science Fiction*, edited by Donald A. Wollheim. Among the stories it contained was Stanley G. Weinbaum's "A Martian Odyssey," which I had never read, having missed the issue in which it first appeared. I was able to enjoy it for the first time when I bought the anthology, and there is another service such books offer. They allow you to recover stories you never knew you had lost.

In 1946, there appeared the first *hardcover* anthology of magazine science fiction, *The Best of Science Fiction*, edited by Groff Conklin. It was an anthology of almost painfully intense interest to me for it was the first to contain a story of mine—"Blind Alley." That was never one of my own favorites; in fact, I considered it then, and now, too, as rather second-rate. Still, I discovered eventually that Groff's opinions of quality could usually be relied on, so perhaps I underestimate "Blind Alley."

In any case, *Astounding*, the magazine in which "Blind Alley" had originally appeared, bought all rights in those days; but John Campbell insisted that anthology income go to the authors involved. It was in this way that I made the great discovery that the same story could be paid for twice and, therefore, by extension, any number of times. (It is only that which makes it possible for a science-fiction writer to earn a living, so this was by no means a non-significant discovery.)

Later in that same year, the most successful science-fiction anthology ever to appear was published. It was *Adventures in Time and Space*, edited by Raymond J. Healy and J. Francis McComas.



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It was a large, thick volume, with stories drawn almost entirely from the Golden Age of Astounding, and it contained my story "Nightfall." That was my introduction to the strange notion that one of my own stories was already considered a classic.

The success of the Healy-McComas anthology opened the flood gates. I haven't the faintest idea how many anthologies have been published since, but I am quite certain that there isn't an issue of any science fiction magazine that hasn't been carefully picked over to see if any gems have remained undiscovered—nor any gem or even semi-gem that hasn't been discovered and rediscovered and re-discovered.

Lately, I myself have joined the parade. I'm not entirely a novice at the anthologists' game, for I edited *The Hugo Winners* (Doubleday, 1962) along with successor volumes in 1971 and 1977, all of which were quite successful.

However, I never let myself get too involved in such matters because every anthology entails a great deal of tedious scutwork—selection, obtaining of permissions, the making out of payments and so on. The result was that through 1978, I edited only nine anthologies, which is very few for a person of my own wholesale proclivities who considers nothing worth doing that isn't worth doing a lot.

With my ninth anthology, however, *One Hundred Great Science Fiction Short-Short Stories* (Doubleday, 1978), I made the marvelous discovery that my friend, Martin Harry Greenberg—tall, a little plump, intelligent, conscientious, hard-working, and good-humored—found a peculiar perverted pleasure in doing all those things, like getting permissions and taking care of payments, that I hated to do.

Then the two of us discovered Charles G. Waugh, also tall, hard-working, intelligent, and conscientious, but less plump and much more grave than either Martin or I. It turned out, he knew every science fiction story ever published, remembered all the statistics and plots, and could put his hand on any of them instantly. Ask him for a story about extraterrestrials from Uranus who reproduce by binary fission and I imagine he would have three different sets of Xeroxes in your hand the next day.

That changed everything. In 1979 and 1980, I helped edit no less than 12 anthologies and, at the moment of writing, there are 6 in press and more in preparation. (Not all are with Martin and Charles: a couple are with Alice Laurance, who has an attribute that the first two lack to an enormous degree—beauty; and one is with J. O.

Jeppson, to whom I am closely related by marriage.)

Very often these recent anthologies have had my name blown out of proportion on the covers for crass commercial reasons, and over my protests, since I contribute no more than my fair share.

On the other hand I contribute no less than my fair share either, and it chafes a little when someone takes it for granted that I am merely collecting money for the use of my name. I would overlook the slur on my integrity involved in this, since all great men suffer calumny; but I hate to lose credit for all the work I do.

Charles, Martin, and I constantly consult each other by mail and phone; and we each dabble in every part of the work; but there is division of labor, too. Charles works particularly hard at locating stories and making photocopies. Martin works particularly hard at the business details.

And as for me— Well, all the stories descend on me; and I read them all and do the final judging (what I throw out is thrown out). I then write the introduction or the headnotes or (usually) both. And since I'm the one who lives in New York, I tend to do the trotting round to various publishers when that is necessary.

The net result is that each of the three of us does what he best likes to do so that preparing the anthologies becomes fun for all of us. To be sure, I labor under the steady anxiety that something might happen to Martin or Charles; but, under my shrewd questioning, both Sally Greenberg and Carol-Lynn Waugh have made it clear that each entirely understands the importance of keeping her husband functioning; and I rely on them with all confidence.

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ON BOOKS: The Best of 1980

by Charles N. Brown

Ever since I started reading science fiction, I've been a list maker. At first, I listed every book I read with a date and rating. Then, I tried to list every SF book I had ever heard of with ratings by both me and my friends. Time passed, and the press of other interests forced me to abandon these projects. I recently came across those thirty-year-old notebooks and was surprised to realize I could remember clearly nearly all of those books I read in the late forties and early fifties, although I couldn't remember the friends who also rated them. It proves the famous saying "The golden age of science fiction is twelve"—those books you read when you first discover reading for pleasure will always stay with you and will always be fondly remembered. Do you remember the first adult SF book you read?

Although I gave up the long lists, I never tired of the desert island game; if you were marooned on a desert island, what twenty-five books would you take with you? My list has, of course, changed drastically over the years. Although it has been mostly science fiction or fantasy, it had a classic tinge when I was in college, a political tinge when I was in graduate school, and a straight science tinge when I worked as an engineer. It's come full circle now and is back to nearly pure SF and fantasy. (A mystery or two keeps sneaking in.) It also seems to be dominated by omnibus volumes. *Dune* is a favorite novel; and, although I didn't care for its two sequels, I might as well take the British one-volume edition, *The Dune Trilogy*. The British are very good at this. They also have a one-volume *Lord of the Rings* and a one-volume *Earthsea* trilogy. Alas, there seems to be no omnibus volume with my favorite novel, *A Mirror For Observers* by Edgar Pangborn. Of course, it's just a game. One of my acquaintances insisted that you probably couldn't pick the books you'd like to take with you; if you could you should choose practical items such as a Boy Scout handbook, etc., and you should save weight and volume by taking paperbacks instead of heavy omnibus volumes. I accused her of having no soul and went back to making my list. What twenty-five books would you take with you? Send me your list and, if enough people answer, I'll do a consensus column on it. Send them to C. N. Brown, Box 13124, Oakland CA 94661.

All the above is prelude to the actual task on hand: a list of the best twenty-five books of 1980. There were over five hundred new

What do you like best about a mystery?



- ☐ the challenge of "whodunit"?
- ☐ creaking doors and things that go bump in the night?
- ☐ steadily mounting suspense?
- ☐ a touch of the macabre...the thrill of the chase...spy vs. counter spy?
- ☐ the sudden twist of plot and a quick surprise ending?

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SF and fantasy books published this year (this column is being written in late December), and, as usual, I spent two happy weeks sorting through books and putting them in some semblance of order. I actually get to do this list three times. A shorter version is used for my annual wrap-up article in Terry Carr's *Best Science Fiction of the Year*, and a longer list covering seventy-five to one hundred books appears in the annual recommended reading issue of *Locus*.

SF Novels

Timescape, Gregory Benford (Simon & Schuster, \$12.95)

Wild Seed, Octavia Butler (Doubleday, \$10.00)

Serpent's Reach, C.J. Cherryh (DAW, \$2.25)

Mockingbird, Walter Tevis (Doubleday, \$10.00)

Firestarter, Stephen King (Viking, \$13.95)

The Snow Queen, Joan D. Vinge (Dial, \$10.95)

Fantasy Novels

The Shadow of the Torturer, Gene Wolfe (Simon & Schuster, \$11.95)

The Vampire Tapestry, Suzy McKee Charnas (Simon & Schuster, \$11.95)

The Northern Girl, Elizabeth A. Lynn (Berkley/Putnam, \$13.95)

Shadow Land, Peter Straub (Coward, McCann & Geoghegan, \$12.95)

First Novels

Hawk of May, Gillian Bradshaw (Simon & Schuster, \$10.95)

Sundiver, David Brin (Bantam, \$1.95)

The Gates of Heaven, Paul Preuss (Bantam, \$1.95)

Collections

Wave Rider, Hilbert Schenck (Pocket, \$1.95)

The Island of Doctor Death and Other Stories and Other Stories, Gene Wolfe (Pocket, \$2.95)

San Diego Lightfoot Sue and Other Stories, Tom Reamy (Earthlight, \$14.95)

Expanded Universe: The New Worlds of Robert A. Heinlein, Robert A. Heinlein (Grosset & Dunlap, \$12.95)

The Stories of Ray Bradbury, Ray Bradbury (Knopf, \$17.95)

Anthologies

The Arbor House Treasury of Modern Science Fiction, Robert Silverberg and Martin H. Greenberg, eds. (Arbor, \$19.95)

Voices III: The Campbell Award Nominees, George R. R. Martin, ed. (Berkley, \$1.95)

The 1980 Annual World's Best SF, Donald A. Wollheim, ed. (DAW, \$2.25)

The Best Science Fiction of the Year #9, Terry Carr, ed. (Del Rey, \$2.50)

Best Science Fiction Stories of the Year (Ninth Annual Collection), Gardner Dozois, ed. (Dutton, \$11.95)

Non-fiction

Science Fiction and Fantasy Authors: A Bibliography of First Printings of Their Fiction, L. W. Currey, ed. (G. K. Hall, \$50.00)

In Joy Still Felt: The Autobiography of Isaac Asimov, 1954-1978, Isaac Asimov (Doubleday, \$19.95)

The list is divided by type of book and is in approximate order under each subject. Thus, I preferred *Timescape* to *Wild Seed* although I considered them to be the best two novels of the year. *Serpent's Reach* was a bit lower, but had a fascinating alien civilization. Gene Wolfe's *The Shadow of the Torturer* is unfortunately the first book in a tetralogy. It's the best fantasy novel I've read in a decade. I normally don't like sequels (which is why this list is missing such popular 1980 books as *The Ringworld Engineers* by Larry Niven, *Wizard* by John Varley, *The Wounded Land* by Stephen R. Donaldson, *Beyond the Blue Event Horizon* by Frederik Pohl, and *The Magic Labyrinth* by Philip José Farmer), because they rarely add anything to the first volume. Usually, a sequel is either a rehashing of the original popular elements or an attempt to explain something that was foolishly left out. There are exceptions, of course; and *The Northern Girl*, the final volume in the "Tornor" trilogy, is one of them. It's easily the best of the three books. *The Vampire Tapestry* is not a horror novel, but a strong sympathetic character study with a hero who happens to be a vampire.

I enjoy good first novels. The three novels listed all have flaws, but all three are obviously written by talented people who will make a name for themselves if they keep at it. The Bradshaw book is the first in an Arthurian fantasy trilogy while the other two are "hard" science fiction books.

I prefer novels to short fiction, even though the average novelette or novella is usually better than the average novel. Hilbert Schenck (pronounced Skenk) is a brand-new author who offers us an amazing

collection of semi-connected stories, at least one of which comes close to being a masterpiece. *Wave Rider* did not sell at all and is easily the finest neglected book of the year. I'm still a Heinlein lover (even though I did not like his new novel), and this huge (200,000 words!) collection of Heinlein sweepings fascinated me. Even the bad stories were readable and interesting. Tom Reamy, alas, died three years after his first story appeared. *San Diego Lightfoot Sue* contains nearly all his exceptional short fiction. The title story won a Nebula. Gene Wolfe is a superb short story writer and this, his first collection, is outstanding, although the title causes quite a bit of confusion. And finally, the essence of Bradbury has at last been reduced to one volume.

The Arbor House Treasury of Modern Science Fiction is an admirable attempt to provide a one-volume anthology covering the best short stories of 1946–1975 much the way *Adventures in Time and Space* edited by Raymond J. Healy and J. Francis McComas and *The Best of Science Fiction* edited by Groff Conklin covered the earlier period of modern science fiction. A companion volume featuring novellas is not as successful. The three "bests" of the year have very little overlap. All are good books; and, among them, you have nearly every good SF story of 1979.

Finally, I've put two non-fiction books on the list: The L. W. Currey index would be useless on a desert island, but its complete and accurate listing of the first editions of all the master science fiction writers is indispensable to a collector. The second half of Asimov's autobiography, on the other hand, would not only do well on the island, but it's nearly thick enough to use as a ladder to pick the coconuts.

AND—ON SOME GAMES

by John M. Ford

[These addenda will appear occasionally to give brief notice of some science fiction and fantasy games of interest to readers in general, not just the entrenched gamers. Game publishers please note.]

TimeTripper, designed by James Dunnigan. Simulations Publications Inc., 257 Park Avenue South, New York NY 10010; \$5.95 (boxed)

This is the one about: If you had an assault rifle at the battle of Waterloo (or Zama or Gettysburg or wherever) what could you do? It seems that an American grunt in Vietnam, A.D. 1971, accidentally punches a hole in the timestream, and since anything beats Vietnam, through the hole he goes. . . .

TimeTripper is a (basically) solitaire game in which you, as the Tripper, go caroming up and down the timeline, pausing to shoot it out with the temporal locals, and trying to get back home alive (and maybe with some loot to boot). Along with the historical arrival points—pitting the Tripper against *T. Rexes*, hoplites, Wehrmacht troopers—are science fictional and fantastic situations, including robots, vampires, starsoldiers, the L. A. Freeway, and an outtake from *Night of the Living Dead*. (Doesn't the timeflux go anywhere peaceful?)

The game is reasonably easy to learn, and mildly addictive after a few plays. It is also very simple to teach to another person, even one who doesn't usually play wargames—and once you've done that, the two of you (or three or four) can jump the flux as a team. Really ambitious players can put themselves at the mercy of a game operator ("Timemaster") who shuffles the pattern of history and may slip in battles of his own devising.

This is a really fascinating game, with a lot of elbow room for different styles of play. (You can negotiate with the Swiss pikemen, as well as blasting them.) And as solitaire, it takes up less table space than double-deck Spider. Next time, I'm gonna be *ready* for those zombies. . . .

Asteroid, designed by Frank Chadwick and Marc Miller. Game Designers' Workshop, 203 North St., Normal IL 61761; \$5.95 (boxed).

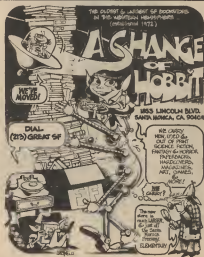
Mission: Impossible meets *Planet Stories*: The demented computer brain of a mining asteroid has kicked the rock onto a collision course with the Earth, and only a dozen brave souls can prevent The End of Civilization As We Know It. There's the elderly professor and his beautiful daughter; ace reporter "Scoop" Phillips; the luckiest man in the world; the demolitions expert; Captain Hanson of the Air Force (blond, good teeth); Sasha the mine dog (brown, really good teeth)—and opposing them within the mazy levels of the mining station, an army of deadly robots and a mad computer with a crush on the prof's daughter. . . .

You get the idea. *Asteroid* takes every cliché you ever heard (I meant that about the crush on Nicholle; talk about fates worse than

death) and turns them into a tense, exciting game you can learn in half an hour and play in two—and since the station is arranged newly every time, and the team of valiant humans (and faithful dog) can be varied, the game plays differently every time. ("It's my turn to be the deranged computer!")

Several games have had a humorous intent; this is one of the few that is both really funny and really playable. All the great images of the Fifties B-pictures come to life: robots like laser-wielding shop-vacs trundle through the corridors; Lucky McGee kicks the disintegrator to fix it while his brother Muscles kicks in a door; Ms. Jones, the world-famous psychic, is solemnly dead wrong about the occupant of the next room; "Can't you be *serious*?" grates steel-jawed Captain Hanson (as played by John Agar), "This is the end of the world we're talking about!"

It sure is, and more fun that it ever was in those movies. Besides, this time the computer has a chance.







MOONBOW

by J.P. Boyd

ART: Rick STERNBACH

Dr. Boyd tells us that this story was inspired by Sir Horace Lamb's textbook, Hydrodynamics, which was first published in 1879 and has been in print for more than a century—probably a record for a textbook actually used as such, as opposed to something like Newton's Principia, which has become a mere historical document. The sixth and final edition includes a vast amount of information about the major topics of Lamb's youth, but rewritten in modern notation and incorporating later results. Rotating, self-gravitating figures of equilibrium were a hot topic in the 1880s.

"Imagine a planet in the shape of a doughnut, a ring wide enough to reach from Earth to Earth's moon, but only a hundredth of that thick. Spin this torus so as to make its nights the length of two earthly nights and its days the span of two terran days, and then the centrifugal force will exactly balance the gravitational tendency of the ring to contract into a sphere. This is the world that I have found."

—From the log of the *Percival Lowell*

The basic question was still: why a torus? Why build a world in the shape of a ring instead of cities in space or a system of ordinary spherical planets? Michael Alexander, castaway, listened to the thunderstorm beating down on his tent and shook his head. He had far more immediate concerns, and he was so tired and footsore that it was only during an enforced halt like this that he could think.

First, his starship was on the bottom of the sea several hundred kilometers to the southwest. He was too far outside known space to have made the usual contact report. Now he was alone on a world with the area of sixteen Earths, and no one else in the galaxy knew more than vaguely where he was.

His second trouble was the dipterans. After he had beached his raft and fallen into an exhausted sleep, he had awakened to find a giant bird watching him from the trees. It was dipteran—four great wings instead of the single pair of its terrestrial counterparts—but it dwarfed the largest eagle. Occasionally, it had extended its wings like a man stretching, revealing curious hourglass-shaped markings on the forward pair of wings, but for the most part, it had been as silent and motionless as well-weathered stone. It had not attacked, even while he was asleep and helpless; but all along his march, he had been shadowed by great wings, and he sensed rather than saw that one was out there now in the blackness and cold of the night rain forest.

But it was the third problem that condemned him: the native vegetation lacked essential vitamins and amino acids. His food processors could make them and, in theory, he had saved the minimum resources necessary to live off the land, a whole raft-load of equipment. Their power cells would last only a few months, however; and then, very slowly, he would starve with a full stomach.

He softly stroked Rafe's wet fur. Worn out by weeks of marching with full load, the St. Bernard was asleep so soundly that not even the thunder could rouse him. "I'm sorry I got you into this, old man."

The cruise of the *Lowell* had been his first solo mission since his graduation from the Academy. He had joined the Explorer Corps because he had failed—or perhaps more precisely, had not succeeded—at any of the other half-dozen vocations he had tried before: painter, poet, craftsman, engineer, and also because, in the course of his struggle to find something he was really good at, he had become the kind of polymath the Corps wanted. There were not, to be honest, all that many candidates. It was too lonely and there was too much risk of the unexpected—like a ship's computer turning catatonic and sending its vessel plunging into the sea. And now he had failed again.

During those two double-length days and nights of drifting on the open ocean, shivering, wet, and constantly bailing, his tired brain had found only one small chance. One of his sensor missiles—equipped with a Faster-Than-Light transmitter—had landed a thousand kilometers inland from where his raft had beached. If he could reach it, steered by its beacon when he was within direct line-of-sight, he could send a distress signal that could be picked up on Earth itself. Altering the bandwidth was trivial. The march was not.

The sky flashed; and almost instantly, the earth and rain forest shook with thunder. A severed tree limb crashed, echoed by a shrill

cry, and Alexander thrust his head out into the full force of the rain.

He saw it for just a moment—four vast wings and the powerful beak of a carnivore silhouetted against another flash of lightning—but frightened by the blast, it was flying almost directly away from him.

Sighing, he withdrew into his shelter and stretched out to rest his aching legs. The rain had turned this bit of high ground into an island, and it would be many hours before he and Rafe could travel. Still prone, he felt for the microphone of the argus, the multi-channel sensor, library, and recorder named after the hundred-eyed watchman of Greek mythology. There was one minor puzzle, at least, that he had solved, and it was time he logged it. Afterwards, he would sleep, and when the rains stopped, he and Rafe would resume their long march to the northeast.

"On any other world, as heavily loaded as we are, travel would be simply impossible, but here we make fairly good time even in the hills; the surface gravity is only one-fifth that of the earth.

"This shocked me. It seemed impossible that a world with such weak gravity could hold an atmosphere, and yet the sun glinted off its clouds and violet seas even from ten million kilometers away. Waiting out an earlier rainstorm, I finally understood. Because its large diameter is a hundred times greater than its cross-section, the curvature of the torus is very small, and therefore, within a few thousand kilometers of the surface, the gravitational field is approximately the same as it would be if the torus were a straight rod 3000 km in diameter and infinitely long.

Consequently, gravity decreases proportional to the *first* power of the distance to the center of the rod instead of the second, which would be the 'inverse square' law applicable to a spherical planet. This slower weakening of gravity with height makes it possible for the ring to retain its atmosphere almost indefinitely.

"I think—perhaps I shall never know for sure—that this difference may have caused the *Lowell's* computer to lapse into catatonia when I tried to move into a close orbit. Far from the surface, of course, the curvature of the ring

becomes important and the gravitational field is very complicated. The *Lowell's* programmers could never have imagined a planet as wide as the distance from the Earth to the Moon.

"The great mystery is still: why? What is so special about this shape or the low gravity?"

—From the log of the *Percival Lowell*

In time, perhaps, he would be able to adapt his circadian cycle to a forty-eight-hour day—experiments had shown that at least some men had the ability—but for now he would have to travel both by day and by night. In the darkness, it was easier than he had anticipated. The far side of the world at its narrowest was still as wide as the Moon in Earth's sky, but at midnight, not a mere disk, but the whole of the farther half-ring parted the shell of stars as a band of fire.

When he had first seen it, looking up from his raft, the golden rainbow had left him in awe. An arch of light, colored with patches of cloud-mantled seas and whimsically-shaped continents, it extended from the zenith halfway down to both the eastern and western horizons, a hybrid of moon and rainbow.

As the stars turned, so did the arc of light. At dawn, it filled half the sky—hazy and wide at the tree-tops, clear and narrow at the terminator almost directly overhead—while the rising sun shone opposite it in the west.

During the daylight hours, there were two arms visible. By noon-time, they reached up from the horizon halfway to the sun, but by dusk, the eastern arm had receded almost to the treetops while the western arm had grown almost to the zenith, soon to float free of the horizon and rotate until the arch of light was directly overhead again.

In space, he had defined "east" to be in the direction of the planet's rotation, but here on the inner side of a torus, the definition was disorienting: the sun rose in the west. Once he had learned to recognize the oceans and landmasses, however, his confusion had been replaced by amusement: the Moonbow was a natural sun-dial.

He and Rafe were far too sore to be amused by much else. He had lost count of the number of times he had fallen. The plains had given way to hills and broken ground. He had bruises on his hip and both shoulders where the sharp edges of his equipment had gouged into him as he slid down into a ravine, but his ankles hurt far more. As they thrust him up slopes which were too steep to climb

without ropes and pitons on any other planet, his feet were bent into impossible angles, and the joints and ligaments were protesting angrily. Nonetheless, they were still moving on, and when they rested, he turned on the argus's screen and looked at maps of the cities.

His scanners had found more than a hundred from space, but there was no hope in any of them. His sensors would have detected a campfire, even the electromagnetic noise of a single lightbulb, but there was nothing except vast stone ruins. None lay close to his path, and the wind and rain would have disposed of the books and transport vehicles and burial urns millennia ago; nothing would have endured but the stone.

Even so, the maps were a clue: most of the cities were on the inner side of the ring. Clearly, the Moonbow had been important to them. Yet there were a handful of cities on the outer side as well, where the Moonbow was invisible, and it was hard to believe a civilization would make a world this awesome merely for the sake of scenery. Perhaps the Moonbow was no more than a red herring in disguising the answers to his real questions: who had built this world? And why?

"The inner and outer sides of the torus are rain forest while the top and bottom are desert, the dry lands I have now crossed into.

"The Hadley flow is responsible for this. On earth, air warmed by the tropical ocean rises like steam above a teapot and air chilled by too little sun at the poles must sink. To conserve mass, the warm equatorial air must flow poleward in the upper troposphere while the cool, subsiding air must flow equatorward near the surface to create a kind of equator-to-pole conveyor belt. The rub is that rising air must expand since the pressure decreases with height, and this expansion cools the air and brings it to saturation. Clouds form and precipitation and the result is the creation of tropical rain forests. At the pole, a very different tale—the sinking air has already lost most of its water vapor. The subsiding polar air is not even close to condensation, and so the poleward half of the world—yes, even above an ocean—knows as little of rain as a child does of evil.

"On Earth, of course, the planet is spinning so rapidly that this idealized flow breaks down at high latitudes into the cyclone waves that create the high and low pressure centers that provide the middle latitudes with their weather. The subsidence actually is centered at about 25 N. and S. rather than the poles—but in these subtropical latitudes are all of the earth's great deserts: the Sahara, the Gobi, the Mojave, and a dozen others.

"Because the torus has both a slower rotation rate and smaller cross-sectional diameter than earth, the Hadley cell does extend all the way to the poles, as also true of the lower atmosphere of Venus. Here, however, the 'equator' is represented by the inner and outer sides of the torus, and the 'poles' are its top and bottom.

"As it does for Earth's tropics and subtropics, the Hadley flow is very effective at reducing the north-south temperature differences that would otherwise exist because of the varying amounts of sun that reach different latitudes. Here both the rain forest and the desert are temperate and mild—one blessing at least.

"Although both my missile and the beach where my raft landed are near the equator, the circle-shaped ocean I have called the Central Sea will force me still farther north, towards the top of the ring."

—From the log of the *Percival Lowell*

The desert itself was unexceptional—warm by day, near freezing at night, and covered with the sort of scrub vegetation one would find in any semi-arid region—but it gave him an astonishing discovery. The tower itself, a stone octagon that dominated a small oasis on the Central Sea, was a disappointment; aside from huge windows ten meters up and higher, he could find no breaks in the masonry. A climb would be risky, pointless, and time-consuming, and so he had reconciled himself to a brief external scan with the argus for the sake of science when he realized Rafe was missing.

Simultaneously, he heard barking and the flutter of wings. Sprinting around the tower, he caught the setting sun in his eyes and was half-blinded, but he nonetheless made out a great bird retreating

over the water and Rafe barking furiously in front of a low, roofless ruin.

The little shelter was empty except for a dead, half-eaten animal about the size of a terrestrial rabbit which had apparently been the bird's interrupted dinner. Rafe stopped barking and allowed himself to be petted while his master knelt and played his lantern around in the shadows, but there was nothing but smooth, closely-fitted stone, and even the floor was badly weathered.

Suddenly, a flash of light caught his eye. He picked it out of the corner, blew the dust away, and stood up to hold it in the sun.

It was a ring, gold possibly, or some other nontarnishing metal. What shocked him was that it had been recently and lovingly polished.

The ruins and the absence of electromagnetic radiation had convinced him that the builders of this great world were long dead. He did not know who or what had dropped the ring, but its brilliant luster destroyed all his comforting theories in but a moment.

The long, uneventful marches that followed were a frustrating anti-climax. The desert was very cold at night, but the myriad little lakes kept him well-supplied with water and there was always enough raw vegetation to feed his food processors. Here, as in the rain forest, there were no large carnivores and the dipterans kept their distance. There was no risk, no danger at all.

The days became weeks, and the weeks became months, and still he trudged day after day, more and more bored, more and more lonely, unable to explain to his increasingly exhausted companion the necessity of this ordeal, more and more tired and uncertain. The terrain was flat and unending, dotted with scrub and the ocean to the south, but somehow seeming as lifeless and barren as the maria of the moon. In the middle of a long and difficult night when it was too cold to travel and they had gone too far by day, he entered this:

"I am still afraid, but I am two-thirds of the way to the missile, and I know at least that fear will not change what we do.

"I hope that if this log is ever found, the Corps will not find me an embarrassment. There were many within it, especially Colonel Benedict, my advisor, who continued to believe in me even when my failures in the classroom and my poor skills as a pilot had destroyed my faith in myself.

I would not want them to be ashamed of me. But I am too weary, too close to the time when there can be no more deceptions, to be anything but honest.

"I am not sorry for myself—I chose this, and I regret nothing. The Moonbow is with me always, reminding me that I am an Explorer, that the insignia of the caravel on my breast is no longer a promise but a profession, and it has become for me as much a symbol of hope as the Star of Bethlehem for the Magi.

"But this is not the same as being unafraid. I fear but I go—if I need an epitaph, let that be mine."

—From the log of the *Percival Lowell*

In truth, he was bruised and sore almost beyond endurance. His asclepiad, which was a cybernetic first-aid kit, could set a broken bone, but because drug-numbed muscles were too easily torn, it could do little safely for his aching joints or Rafe's.

In the desert, the rain comes in the form of sudden, violent thunderstorms and the soil has poor absorptive capacity, but sometimes he also had to accept the risk of camping in low ground. His power cells were draining faster than he had anticipated and he had no idea of what detours or slow travelling might lie ahead.

Even so, when he awoke from a sound sleep to find himself in the middle of rain, his attention was first held by the crying of the bird.

It dove on him almost as soon as he stood up outside. He snapped the beam on minimum dispersion and aimed, but to his astonishment it pulled up, still cawing shrilly above the sound of the storm. When it swooped back for another pass, however, he steadied himself and aimed.

Rafe erupted from the tent just as he fired and knocked him sprawling, but the fringe of the beam caught the dipteran's left wings and with a scream of pain, it glided past and crashed a hundred meters beyond them. Alexander lunged for Rafe's collar, missed, and fell in the mud. It was then that he heard the roar of the flood waters.

"Rafe! Emergency! Emergency!"

Not waiting, he desperately threw equipment into the raft. First the asclepiad, then a food processor and a storage locker, and then—

And then the flash flood slammed into him. He was flung back—

wards, choked on foam, and felt a thornbush open up the back of his wrist like a cat-of-nine tails underwater. He bounced, bumped, and finally turned on his stomach as his training took hold. A small shrub smashed his face and that was the last clear thing he remembered until he found himself in a tree.

The flood was receding, and in the distance, he could see where the waters had carved a channel through the ridge that he thought would protect him. The raft had grounded a few hundred meters further on, but there was no sign of Rafe at all.

The dipteran lay only a few meters away. It was possible it had crashed beyond the surge line, but its yellow wings, marked with an hourglass shape on the upper surface of one pair, were stained with mud and grit.

Alexander splashed over to it, completely filthy himself, and noticed that little pools of muddy water were all that remained of the torrent.

A wing twitched, and he stopped. He wanted to help, but his own Rafe was buried in the mud, and without the asclepiad, he could do nothing even for himself.

"I'm sorry, old man. If it weren't for you, the flood would have killed all of us."

He had realized, a split second too late, that the dipteran was pulling out of its dive even as he had fired. It had never intended to attack.

The dipteran was only a dumb animal, but he had come to think of Rafe almost as a person, and he felt the same bond to this creature which perhaps by accident, perhaps by unconscious intent, had given them a chance for life.

The wing stirred feebly again, but Alexander moved away towards his raft. There was nothing he could do—for anyone.

It was night, and the Moonbow shone clearly across the heavens. Alexander sat down and put his head in his hands.

Somehow, the raft had stayed upright and the equipment with it. Rafe had endured a much different fate, being carried a very long way downstream, but at dusk, he had slowly shambled in, exhausted, his fur clotted with mud, and badly bruised, but alive, and not seriously hurt.

The one irreparable loss was the argus. Protected by a steel plate when not in use, the display screen and the speaker/microphone had survived. The delicate crystalline elements in the sensor probe, however, were smashed beyond all hope of salvage. Worse still, the

internal radio antenna had cracked and—though it made little difference—the supra-wave receiver as well. The argus could still talk to him, read to him, and record, but it had been blinded. Until another starship warped down from the heavens, he would have no senses but those of his own eyes and ears, and Rafe's.

The greatest danger was that now he could not find the missile by radio. He would have to search by eye, and that could easily take more time than he had. He did not know its location to within more than a few kilometers.

He looked up again at the Moonbow. He wished he were more sure the dipteran had done them a favor.

They resumed their march at dawn and within a few days had crossed back into the rain forest. The leaves, although dyed by a substance almost identical with chlorophyll, were a deep burgundy red. The trees were as slender and smooth as birch, but jet black, and grew as high as thirty meters in the low gravity. The rich forests of wine and ebony improved his mood, and as they struck overland away from the Central Sea, the land rose farther and farther until he finally reached the great ridge overlooking the coastal plain where—somewhere—his missile had fallen.

"I am now more than six kilometers above sea level, and yet the air is still warm and comfortably thick. The grass beneath me and the woods that shade me from the hot sun are no different from what they were five kilometers lower. On earth or any normal world, I would be gasping for breath on an icesheet. Once again, it is the low gravity that is responsible.

"The atmosphere becomes both colder and thinner with height, of course, but both the e-folding scale for the pressure and the inverse of the adiabatic lapse rate have been magnified by a factor of five. This has probably saved my life, because the topography of this peculiar world is on the same gargantuan scale."

—From the log of the *Percival Lowell*

After descending from the mountain chain, he wandered about the coast for a couple of weeks on foot. The dense forests and heavy underbrush extended right up to the beach sand. The dipterans

soared effortlessly in the low gravity, but he himself was able to see only a few meters ahead. In this terrain, he might search for many years without ever finding it—but with his food processor battered by the flood, he perhaps had very little time indeed.

And so he was still in a prison and they were still free. Whenever he could, he ate his meals in a clearing on a bit of hill so that he could lie back against a tree and watch the rhythm and beauty of the great birds wheeling above him.

This world was a good place for wings. The weak tug of the earth was the most obvious advantage, but the Hadley flow in fact was an equal blessing. The endless cycle of warm fronts and cold fronts, squall-lines and occlusions, that so bedevil earthly flight even with iron wings, are phenomena of the middle latitudes where the Hadley flow is unstable and absent. On this world where the Hadley flow was everywhere, there would be no weather at all except for occasional thunderstorms and hurricanes, and the winds of both would be weakened, especially the latter, by the low gravity and slower rotation rate. Then, too, the temperature was almost uniform—and mild—over the whole planet: another benefit of the Hadley flow, which carried cool air down from the top and bottom of the torus to its inner and outer equators. And the Moonbow, as well, would ever be a beacon both by day and by night.

A good world for wings. If he only could fly himself—

Watching the dipterans use the ridge thermals for lift gave him his great idea.

"I have made a hang glider. It is so obvious—we flew them in training—but that was more than two decades ago. I have been so tired, so long on the march—but that's no excuse. The frame is made of native wood; the fabric was cannibalized from my tent, which we no longer need now that I have made a lean-to near the beach. Without the argus's library, it would have been hopeless, but it gave me the basic design, and also the knots and wrappings to bind the cloth to the wood with steel wire and rope. I launch it from the slopes and land on the beach or a clearing. As I grow more skilled at using the ridge lift, I have learned to stay up for hours."

—From the log of the *Percival Lowell*

As the weeks passed, days indistinguishable from one another, he became increasingly pessimistic about his search—and found he did not care. He still played with Rafe, petting him, talking to him, and he still spent long hours looking down from the glider, but he no longer had an obvious, immediate goal and the long months of loneliness and intense physical hardship had worn down his spirit. He could only wait now, and in that wait, the same numbness of mind that had delayed his recognition of the possibilities of the glider had now extended itself to almost everything. He no longer seemed capable of worry or fear, anticipation or love. He no longer seemed able to feel much of anything.

The experience that came closest to penetrating his numbness was the exhilaration of flight itself. At the Academy, he had read almost every fiction or nonfiction book about new worlds or exploring that had ever been written. He had safaried with Burton and Speke, searching for the source of the Nile, and he had taken wing with Olaf Stapledon's Sixth Men, who had lived only to fly.

On the ground, his mood was Burton's, who had once said, "Why do I explore? God knows—the Devil drives." In the air, though, he felt a peace and serenity he had never known before. He watched the dipterans plunge half a dozen kilometers in the act of mating—falling gently, ever so slowly, in the deep atmosphere—and took delight in their games as one chased the other for half a day until their roles were reversed, and the game resumed.

Every so often, a swarm of a score or more would gather to perform a stately and complex aerial dance. The little honeybee, with no mind at all, could perform a waggle dance of astonishing complexity: and it was no wonder that these much larger creatures could trace spirals and helices and tight figure-eights in a mutual pattern, but what purpose could it serve?

On the ground, he no longer had the curiosity to even ask: who had built this world? And where had the builders gone?

As his thoughts on the earth and of the earth became increasingly empty, he began to spiral higher and higher, far above a reasonable search level. It was slow work to climb because the plumes of warm, rising air, like the gravity which drove them up, were gentle and slow-flowing, but one day, beginning at dawn, he carried his fantasies to the ultimate and ascended at least seven kilometers.

To the west, he could retrace the last hundred kilometers of his journey through the mountains of wine and ebony, titanic wave upon wave of scarlet leaves which finally merged with the haze below the western arm of the Moonbow. North and south, the great

ridge below dropped down steeply to the white strip of sand that divided the burgundy forests from the sea. To the east, a million whitecaps gleaming on an indigo ocean that merged with the base of the other arm of the Moonbow in the far distance, and a single island, a hundred kilometers offshore, that sparkled like Capri on old earth, where the emperor Tiberius had built a villa. To have this world as his alone, to fly so high in the rich warm air like an enthroned king granting an audience to a continent, made him feel like an emperor himself.

Only here, where the scale of the atmosphere was five times as great as on any normal world, could one have such a panorama without oxygen and heated clothing. Only here, where the Hadley flow was everywhere, was the weather almost always sunny. Only here could a glider take off and land so easily or a large bird fly hour after hour without tiring. Stapledon's Sixth Men would have called it heaven. They gave up all literature, all science and its creature comforts, to dance and play and feast on the wing. To them, this would have been paradise.

Alexander had no wings, and he was dying, and to him it was.

From habit, he still made occasional entries in the log, and as he did so, realized that even if he were still well and healthy, his power cells were draining, his concentrates almost gone, and he was condemned as surely as ice in the sun. But there was nothing to do but fly, and he no longer cared.

He paid for his carelessness on a perfect sunlit day when he was simply drifting along, drowsy, no longer even consciously looking down. One moment, he was daydreaming, and the next, he was tumbling out of control in a violent spin.

Desperately, he tried to recover. The design he had chosen was easy to build, but not very stable. If he didn't break the spin—terminal velocity was still twenty meters per second.

He could not break the spin. He crashed.

The uranopolis where Karen waited was actually a spinning cylinder twenty kilometers in diameter, which orbited the barren fourth planet of Tau Ceti, but in his dream, it had become a torus, and he and all its human inhabitants were building a planet in the same shape. First a slender ring of cable rotating very slowly, two dozen earth diameters in width, then systemships spraying on jets of molten iron and silicon transmuted from the methane of a gas giant. Visibly it thickened, kilometer after kilometer, and faster it spun, faster and faster, to keep it from collapsing into a sphere,

until it was as thick as Earth's moon, and rotating at six kilometers per second.

And then he realized that the little glass-hulled torus was not a work of man, nor the giant spinning world either, and then he was on its surface. On the top of the next hill, he saw the gaunt humanoid shapes of its builders, and one started to turn towards him, and— He woke up.

It was night, and the Moonbow was shining brightly through the branches above him, a single arch of light filling more than half the sky. He shifted his head slightly, then coughed and was seized with agony. He tried to move his arm, and pins and needles shot down it, to be augmented by the beginnings of a dull ache. He remembered the crash.

Two dipterans, locked in embrace, had fallen on the glider. He saw the tattered wreckage above him and understood why he was still alive. He had landed in the top of a tree. The branches had torn the rubber fabric to shreds and broken the wooden spars beyond any hope of repair, but the mechanical destruction had broken his fall, and he had landed relatively gently.

Even so, his left arm was broken, and he had cracked several ribs. If he could not travel— A warm, wet tongue suddenly licked his face.

"Rafe, how did you find me?"

The dog made low little crying noises, and when he put his bloody paws on his master's chest, Alexander realized that the blood was not his own.

"How?"

He lifted his head a couple of inches and tried to look around. In the bright moonbowlight, he saw the dark mass of the asclepiad only centimeters from his head.

"How could you possibly—?"

The dog did not even attempt to answer—his paws were too cruelly hurt—but Alexander reasoned it out.

"You wrapped the strap through your fingers and dragged it here, all those kilometers. I don't know how I can ever thank you, Rafe."

The dog cried very softly and Alexander reached up with his good arm and tried to ruffle his fur. "Good boy, good boy. But please, I have to use the machine."

Letting his head sink back on the grass, Alexander recited the magic formula. From the corner of his eye, he saw a flickering of lights as the diagnostic sensors began to scan him, and he closed his eyes again. A few moments later, he heard the soft hiss of an

airgun. The painkillers took effect, and he began to feel much better. "Rafe, drag it around to my left side. My left side."

The dog complied, and strong metal fingers erupted from the asclepiad to immobilize his arm. When he opened his eyes again, his arm was wrapped in a fast-hardening cocoon.

He sighed and looked up at the Moonbow. He knew the drugs had stimulated him, but he felt as if he had come alive again when he had awakened to pain, and all the weeks since the flood had only been a bad dream.

Karen was not really waiting for him—she had been in someone else's very good arms when he had left for the *Lowell*—but they had parted as friends, and she would worry if he were posted missing. Most explorers had personalities like his: introverted, longing for those personal relationships they were never comfortable in, finally accepting that life alone was possible and even happy, within limits. A man who got along too well with people would never be happy in the vastness of space.

And yet paradoxically, not any sort of hermit would do. One who had closed his world upon himself, as he had managed to do these last few weeks, was no use to anyone. The ones who struggled through the decades of Explorer training were those who had not lost touch—or hope, they were those who would take the great world with them wherever they roamed, in their hearts and feelings.

His dream and his dog's love had reminded him of this, that no matter how far he travelled, no matter where he left his bones, his world-line would be forever bound to the third planet of a yellow star.

He decided he wanted to live after all. The sedatives took hold, and he slept.

He was up and about within a few days and planning a systematic search on the ground, but in the dreamy, trance-like mood of the weeks before his crash, he had lost sight of the urgency of his quest. Now, allowing for a reasonable interstellar transit time, he would run out of both stored and manufactured food before rescue even if he found the missile at once. With ample water, the native vegetation could keep him going for a couple of weeks longer, perhaps more, but he faced an almost hopeless challenge. There was nothing to do, however, except to use every available hour of daylight to search.

To keep his mind busy, he began to observe the wildlife more closely and enter his thoughts in the argus. During the long nights,

he played back his observations and daydreamed of impossible fantasies—building a log cabin, making an expedition to the interior to hunt the large, docile ruminants for hides to clothe new wings—but mostly he slept, dreamless and exhausted, until dawn came to call him to the march again. What ended his search, however, was totally unforeseen.

The dipterans were as scared of Rafe as he of them, and usually kept their distance, but one day when he had been sent back to the tent for food, one of the great birds flew over his master and began screeching.

Alexander panned the horizon with his eyes. There was no obvious sign of danger, and the dipteran did not seem frightened, but as it persisted, he became convinced it was trying to communicate with him. Finally it drew off a hundred meters to the north and hesitated, almost hovering, making tight little spirals.

Impulsively, Alexander drew his blaster and followed, and the dipteran led off up the coast.

They travelled nearly five kilometers until Alexander was in woods so thick he had trouble slipping between the branches and keeping his guide in sight, but the dipteran knew what he was about and circled back constantly. Then they came to a clearing where dead branches and shattered trunks were strewn everywhere, and the bird alighted. Perching on its back claws, it wrapped its massive foreclaw around a sablebirch branch and used it to lever some new fallen debris away from what had made the clearing, but Alexander had already seen it was his missile.

The dipteran dropped its tool and sat quietly on all four feet, wings folded. Alexander shook his head numbly.

"It was so obvious. The windows in the tower were doors!" Doors wide enough to admit great wings in flight. There had been no need of entrances at the surface because the dipterans rarely walked—on this world.

"You made the torus!"

It was all so clear now. A winged race had evolved on a world of normal gravity—probably less than Earth's, but still so strong that they had had to spend most of their hours on the ground. Flight had not intoxicated them then—indeed, a few brief moments on the wing must have been followed by sadness and exhaustion as deep as what he himself had felt on the march—and they had built a great civilization and reached the stars. And then they had dreamed of a world where wings would be free, where the gravity was so gentle that they could fly almost forever, where the scale of the atmosphere

was so large that the air was still thick and warm six kilometers up, where the Hadley flow would drive away squall-lines and occlusions and most culpable weather, where the Moonbow would be a beacon both by day and by night. His own pilgrimage from pain to a paradise of somnolence and endless, dreamy flight had been but a mirror of their own. And here, as it had done to Stapledon's Sixth Men when the species had evolved to remain airborne almost constantly, the sky had trapped them.

Alexander did not know when the cities had been abandoned or how far the species had regressed. He was not even sure whether his new-found friend was really any more intelligent than Rafe. But he still would pay his debts.

The dipteran had bright yellow wings marked with a black hourglass on their upper surface. Alexander took the ring from his belt pouch and walked forward. The dipteran did not move until he was directly in front of it and then raised its right foreclaw. Alexander saw the patch of discolored skin on one finger and placed the ring upon it.

As he backed away, the dipteran looked at him and emitted one brief squawk.

"You're welcome." He gestured towards the missile with his hand and nodded. "And thank you."

When he left for the argus, which contained the circuit diagrams he needed to tinker with the missile, the dipteran remained quietly in the clearing. It was as if it knew that Alexander would return.

After his message had been sent and acknowledged, Alexander made himself a new flying machine from fresh-cut wood and the fabric sample bags in the missile, but this one was not a glider and was intended strictly for altitudes low enough to crash from. R. V. *Kepler* had been a little closer than he had expected, allowing him to waste a little energy on his new hobby with safety, but he had no illusions about who had saved him.

The dipteran he had named Hourglass—his name for himself was an unpronounceable succession of squeaks and clicks—had watched his experiments with great bewilderment, but had been very excited—or amused—when Alexander had made his first fifteen-second flight. Now he had become almost proficient.

His arms flapped slowly in a rhythmic motion, bringing him in over the breakers for a smooth landing on the beach. Though he had been up for only a very few seconds, his arms were leaden and aching. Nonetheless, he was very pleased with himself. He was

indulging himself in what men had dreamed of since the time of the mastodon.

There were flying amphitheatres on Luna, but here he was out in the sun and wind, truly as unwall'd as the birds. Watching Hourglass bank to turn with him, he was conscious of another freedom. He had lived for what would have been the equivalent of several lifetimes in the days before anti-agathics, and he had tried and played at many different roles in an interstellar society where almost everything was a game, and every citizen as rich and leisured—and bored—as the English gentry of the eighteenth century.

On this world, however, he had tested himself against something real, and had not been found wanting. He would always be shy, always be at the end of the alphabet in the dominance hierarchy of the ape that was man. At least now, however, he would never lack respect for himself, or faith. And he had made a friend.

He was too busy ruminating to land cleanly, and as he sat up laughing in the sand and dusted himself off, he caught sight of the dipteran turning lazy circles above him.

Hourglass would remain here forever, but for Alexander, the long flight was just beginning. And like him, brilliant even in the day, the Moonbow was reaching its twin arms toward the sun.



SCHOOL DAYS

Said a student from far-off Reticulum:
(Dismayed by their crazy curriculum)

"They teach UFOs, ϕ ,

And a rational π —

I hear Asimov's set to ridicule 'em!"

—James Randi

CRACKER'S PARALLEL WORLD

by Martin Gardner

"You mean," exclaimed Ada Loveface, "there really are parallel worlds?"

"The evidence is overwhelming," said Professor Alexander Graham Cracker. "I know you like classic science fiction, so you must have read H. G. Wells's great utopia novel, *Men Like Gods*. If so, you may recall that his protagonist, Mr. Barnstaple, along with several other persons, gets transported to a parallel earth with a history almost the same as ours, but not quite."

"I know the book well," said Ada. "Wells modeled his Rupert Catskill on Winston Churchill, and Father Amerton on Gilbert Chesterton. Most science fiction fans don't know that."

"To tell you the truth," said Cracker, looking surprised, "I didn't know it. I'll have to read the book again sometime. Anyway, you'll be pleased to know I've discovered a way of entering parallel worlds provided they're no more than half a centimeter away from us along the fourth space coordinate."

At that time Cracker was a research physicist at Columbia University, in Manhattan, and Miss Loveface was his companion and top assistant. It took six months to construct the parallel-world machine, with its ingenious hyperspace Dean drive, and to surround it with supercooled superconductors capable of creating a magnetic field strong enough to allow the drive to displace the machine half a centimeter through 4-space.

Ada joined Cracker in their first test. They squeezed themselves into the machine, which was about the size of a telephone booth. Cracker pushed a button. There was a loud fire-cracker sound and a bump that jarred their backsides. Apparently the machine had dropped half a centimeter onto the laboratory's cement floor.

Cracker opened the hatch and they twisted themselves out. The laboratory looked exactly the same.

"You've done it again, Alec," said Ada. "The experiment is a bust. Maybe you'll win another Uri." (The annual Uri awards, started back in 1980 by magician James Randi, are bent-spoon trophies that go to the year's most crackbrained science projects.)

"Don't be so sure," said Cracker. "Remember—the differences between parallel worlds less than a centimeter apart may be so slight it won't be easy to recognize them. Let's do some exploring."

It was a sunny October afternoon. As they strolled about Morn-

ingside Heights the campus looked no different than before. Several students, recognizing the professor and Ada, nodded to them as they walked by. The pair paused beside the large bronze replica of Auguste Rodin's famous statue, *The Thinker*. The statue stands, or rather sits, on a cube-shaped granite pedestal about five feet high, in front of Columbia's philosophy building, as if to say "Here, folks, is where all the deep thinking goes on."

Rodin's muscular nude was in the old familiar posture, chin resting on the back of a curved right hand, right elbow on right knee, and the lowered face lost in meditation. Looking northwest, between the corners of St. Paul's Chapel and Low Memorial Library, Cracker could see the gray tower of Union Theological Seminary through the drifting leaves.

"Look, Alec!" shouted Ada, pointing at the statue. "I was wrong! We are in another universe!"

What did Ada see that convinced her? The answer is on page 99.

It's here—
Vol. 4!



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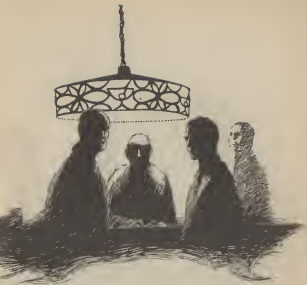
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THE REGULARS
by Robert Silverberg
art: Jack Gaughan

Until recently, Mr. Silverberg told us, he had written almost every kind of science fiction tale that has been told—except a Tale Told In A Bar story. And . . . ? , we asked. So, why not? , he replied, and here is the result:

It was the proverbial night not fit for man nor beast, black and grim and howling, with the rain coming on in sidewise sheets. But in Charley Sullivan's place everything was as cozy as an old boot, the lights dim, the heat turned up, the neon beer signs sputtering pleasantly, Charley behind the bar filling them beyond the Plimsoll line, and all the regulars in their regular places. What a comfort a tavern like Charley Sullivan's can be on a night that's black and grim and howling!

"It was a night like this," said The Pope to Karl Marx, "that you changed your mind about blowing up the stock exchange, as I recall. Eh?"

Karl Marx nodded moodily. "It was the beginning of the end for me as a true revolutionary, it was." He isn't Irish, but in Charley Sullivan's everybody picks up the rhythm of it soon enough. "When you get too fond of your comforts to be willing to go out into a foul gale to attack the enemies of the proletariat, it's the end of your vocation, sure enough." He sighed and peered into his glass. It held nothing but suds, and he sighed again.

"Can I buy you another?" asked The Pope. "In memory of your vocation."

"You may indeed," said Karl Marx.

The Pope looked around. "And who else is needy? My turn to set them up!"

The Leading Man tapped the rim of his glass. So did Ma. Bewley and Mors Longa. I smiled and shook my head, and The Ingenue passed also, but Toulouse-Lautrec, down at the end of the bar, looked away from the television set long enough to give the signal. Charley efficiently handed out the refills—beer for the apostle of the class struggle, Jack Daniels for Mors Longa, Valpolicella for The Pope, Scotch-and-water for The Leading Man, white wine for Ma. Bewley, Perrier with slice of lemon for Toulouse-Lautrec, since he had had the cognac the last time and claimed to be tapering off. And for me, Myers on the rocks. Charley never needs to ask. Of course, he knows us all very well.

"Cheers," said The Leading Man, and we drank up, and then an angel passed by, and the long silence ended only when a nasty rumble of thunder went through the place at about 6.3 on the Richter scale.

"Nasty night," The Ingenue said. "Imagine trying to elope in a downpour like this! I can see it now, Harry and myself at the boathouse, and the car—"

"Harry and I," said Mors Longa. "'Myself' is reflexive. As you well know, sweet."

The Ingenue blinked sweetly. "I always forget. Anyway, there was Harry and I at the boathouse, and the car was waiting, my cousin's old Pierce-Arrow with the—"

—bar in the back seat that was always stocked with the best imported liqueurs, I went on silently just a fraction of a second ahead of her clear high voice, and all we had to do was drive 90 miles across the state line to the place where the justice of the peace was waiting—

I worked on my rum. The Leading Man, moving a little closer to The Ingenue, tenderly took her hand as the nasty parts of the story began to unfold. The Pope wheezed sympathetically into his wine, and Karl Marx scowled and pounded one fist against the other, and even Ms. Bewley, who had very little tolerance for The Ingenue's silliness, managed a bright smile in the name of sisterhood.

"—the rain, you see, had done something awful to the car's wiring, and there we were, Harry on his knees in the mud trying to fix it, and me half crazy with excitement and impatience, and the night getting worse and worse, when we heard dogs barking and—"

—my guardian and two of his men appeared out of the night—

We had heard it all fifty times before. She tells it every horrid rainy night. From no one else do we tolerate any such repetition—we have our sensibilities, and it would be cruel and unusual to be forced to listen to the same fol-de-rol over and over and over—but The Ingenue is a dear sweet young thing, and her special foible it is to repeat herself, and she and she alone gets away with it among the regulars at Charley Sullivan's. We followed along, nodding and sighing and shaking our heads at all the appropriate places, the way you do when you're hearing Beethoven's Fifth or Schubert's Unfinished, and she was just getting around to the tempestuous climax, her fiance and her guardian in a fight to the death illuminated by baleful flashes of lightning, when there was a crack of real lightning outside, followed almost instantly by a blast of thunder that made the last one seem like the snuffle of a mosquito. The vibrations shook

three glasses off the bar and stood Charley Sullivan's framed photos of President Kennedy and Pope John XXIII on their corners.

The next thing that happened was the door opened and a new customer walked in. And you can imagine that we all sat to attention at that, because you would expect only the regulars to be populating Charley's place in such weather, and it was a genuine novelty to have a stranger materialize. Well timed, too, because without him we'd have had fifteen minutes more of the tale of The Ingenue's bungled elopement.

He was maybe 32 or a little less, roughly dressed in heavy-duty Levi's, a thick black cardigan, and a ragged pea-jacket. His dark unruly hair was soaked and matted. On no particular evidence I decided he was a merchant sailor who had just jumped ship. For a moment he stood a little way within the door, eyeing us all with that cautious look a bar-going man has when he comes to a new place where everyone else is obviously a long-time regular; and then he smiled, a little shyly at first, more warmly as he saw some of us smiling back. He took off his jacket, hung it on the rack above the jukebox, shook himself like a drenched dog, and seated himself at the bar between The Pope and Mors Longa. "Jesus," he said, "what a stinking night! I can't tell you how glad I was to see a light burning at the end of the block."

"You'll like it here, brother," said The Pope. "Charley, let me buy this young man his first."

"You took the last round," Mors Longa pointed out. "May I, Your Holiness?"

The Pope shrugged. "Why not?"

"My pleasure," said Mors Longa to the newcomer. "What will it be?"

"Do they have Old Bushmill here?"

"They have everything here," said Mors Longa. "*Charley* has everything. Our host. Bushmill for the lad, Charley, and a double, I think. And is anyone else ready?"

"A sweetener here," said The Leading Man. Toulouse-Lautrec opted for his next cognac. The Ingenue, who seemed to have forgotten that she hadn't finished telling her story, waved for her customary rye-and-ginger. The rest of us stood pat.

"What's your ship?" I asked.

The stranger gave me a startled look. "*Pequod Maru*, Liberian flag. How'd you know?"

"Good guesser. Where bound? D'ye mind?"

He took a long pull of his whiskey. "Maracaibo, they said. Not a

tanker. Coffee and cacao. But I'm not going. I—ah—resigned my commission. This afternoon, very suddenly. Jesus, this tastes good. What a fine warm place this is!"

"And glad we are to see you," said Charley Sullivan. "We'll call you Ishmael, eh?"

"Ishmael?"

"We all need names here," said Mors Longa. "This gentleman we call Karl Marx, for example. He's socially conscious. That's Toulouse-Lautrec down there by the tube. And you can think of me as Mors Longa."

Ishmael frowned. "Is that an Italian name?"

"Latin, actually. Not a name, a sort of a phrase. *Mors longa, vita brevis*. My motto. And that's The Ingenue, who needs a lot of love and protection, and this is Ms. Bewley, who can look after herself, and—"

He went all around the room. Ishmael appeared to be working hard at remembering the names. He repeated them until he had them straight, but he still looked a little puzzled. "Bars I've been in," he said, "it isn't the custom to make introductions like this. Makes it seem more like a private party than a bar."

"A family gathering, more like," said Ms. Bewley.

Karl Marx said, "We constitute a society here. It is not the consciousness of men that determines their existence, but on the contrary their social existence determines their consciousness. We look after one another in this place."

"You'll like it here," said The Pope.

"I do. I'm amazed how much I like it." The sailor grinned. "This may be the bar I've been looking for all my life."

"No doubt but that it is," said Charley Sullivan. "And a Bushmill's on me, lad?"

Shyly Ishmael pushed his glass forward, and Charley topped it off.

"So friendly here," Ishmael said. "Almost like—home."

"Like one's club, perhaps," said The Leading Man.

"A club, a home, yes," said Mors Longa, signalling Charley for another bourbon. "Karl Marx tells it truly: we care for each other here. We are friends, and we strive constantly to amuse one another and protect one another, which are the two chief duties of friends. We buy each other drinks, we talk, we tell stories to while away the darkness."

"Do you come here every night?"

"We never miss a one," Mors Longa said.

"You must know each other very well by this time."

"Very well. Very very well."

"The kind of place I've always dreamed of," Ishmael said wonderingly. "The kind of place I'd never want to leave." He let his eyes pan in a slow arc around the whole room, past the jukebox, the pool table, the dart board, the television screen, the tattered 1934 calendar that had never been changed, the fireplace, the piano. He was glowing, and not just from the whiskey. "Why would anyone ever want to leave a place like this?"

"It is a very good place," said Karl Marx.

Mors Longa said, "And when you find a very good place, it's the place where you want to remain. Of course. It becomes your club, as our friend says. Your home away from home. But that reminds me of a story, young man. Have you ever heard about the bar that nobody actually ever does leave? The bar where everyone stays forever, because they couldn't leave even if they wanted to? Do you know that one?"

"Never heard it," said Ishmael.

But the rest of us had. In Charley Sullivan's place we try never to tell the same story twice, in order to spare each other's sensibilities, for boredom is the deadliest of afflictions here. Only The Ingenue is exempt from that rule, because it is her nature to tell her stories again and again, and we love her all the same. Nevertheless it sometimes happens that one of us must tell an old and familiar story to a newcomer, but though at other times we give each other full attention, it is not required at a time such as that. So The Leading Man and The Ingenue wandered off for a tete-a-tete by the fireplace; and Karl Marx challenged The Pope to a round of darts; and the others drifted off to this corner or that, until only Mors Longa and the sailor and I were still at the bar, I drowsing over my rum and Mors Longa getting that far-away look and Ishmael, leaning intently forward, saying, "A bar where nobody can ever leave? What a strange sort of place!"

"Yes," said Mors Longa.

"Where is there such a place?"

"In no particular part of the Universe. By which I mean it lies somewhere outside of space and time as we understand those concepts, everywhere and nowhere at once, although it looks not at all alien or strange apart from its timelessness and its spacelessness. In fact, it looks, I'm told, like every bar you've ever been in in your life, only more so. The proprietor's a big man with black Irish in him, a lot like Charley Sullivan here; and he doesn't mind setting

one up for the regulars now and then on the house; and he always gives good measure and keeps the heat turned up nicely. And the wood is dark and mellow and well polished, and the railing is the familiar brass, and there are the usual two hanging ferns and the usual aspidistra in the corner next to the spittoon, and there's a dart board and a pool table and all those other things that you find in bars of the kind that this one is. You understand me? This is a *perfectly standard sort of bar*, but it doesn't happen to be in New York City or San Francisco or Hamburg or Rangoon, or in any other city you're likely to have visited, though the moment you walk into this place you feel right at home in it."

"Just like here."

"Very much like here," said Mors Longa.

"But people never leave?" Ishmael's brows furrowed. "*Never?*"

"Well, actually, some of them do," Mors Longa said. "But let me talk about the other ones first, all right? The regulars, the ones who are there *all the time*. You know, there are certain people who absolutely never go into bars, the ones who prefer to do their drinking at home, or in restaurants before dinner, or not at all. But then there are the bar-going sorts. Some of them are folks who just like to drink, you know, and find a bar a convenient place to get their whistles wetted when they're en route from somewhere to somewhere else. And there are some who think drinking's a social act, eh? But you also find people in bars, a lot of them, who go to the place because there's an emptiness in them that needs to be filled, a dark cold hollow space, to be filled not just with good warm bourbon, you understand, but a mystic and invisible substance that emanates from others who are in the same way, people who somehow have had a bit of their souls leak away from them by accident, and need the comfort of being among their own kind. Say, a priest who's lost his calling, or a writer who's forgotten the joy of putting stories down on paper, or a painter to whom all colors have become shades of gray, or a surgeon whose scalpel hand has picked up a bit of a tremor, or a photographer whose eyes don't quite focus right any more. You know the sort, don't you? You find a lot of that sort in bars. Something in their eyes tells you what they are. But in this particular bar that I'm talking about, you find *only* that sort, good people, decent people, but people with that empty zone inside them. Which makes it even more like all the other bars there are, in fact the Platonic ideal of a bar, if you follow me, a kind of three-dimensional stereotype populated by flesh-and-blood clichés, a sort of perpetual stage set, do you see? Hearing about a place like that where

everybody's a little tragic, everybody's a bit on the broken side, everyone is a perfect bar type, you'd laugh, you'd say it's unreal, it's too much like everybody's idea of what such a place ought to be like to be convincing. Eh? But all stereotypes are rooted firmly in reality, you know. That's what makes them stereotypes, because they're exactly like reality, only more so. And to the people who do their drinking in the bar I'm talking about, it isn't any stereotype and they aren't clichés. It's the only reality they have, the realest reality there is, for them, and it's no good sneering at it, because it's their own little world, the world of the archetypical saloon, the world of the bar regulars."

"Who never leave the place," said Ishmael.

"How can they? Where would they go? What would they do on a day off? They have no identity except inside the bar. The bar is their life. The bar is their universe. They have no business going elsewhere. They simply stay where they are. They tell each other stories and they work hard to keep each other happy, *and for them there is no world outside*. That's what it means to be a regular, to be a Platonic ideal. Every night the bar and everything in it vanishes into a kind of inchoate gray mist at closing time, and every morning when it's legal to open, the bar comes back, and meanwhile the regulars don't go anywhere except into the mist, because that's all there is, mist and then bar, bar and then mist. Platonic ideals don't have daytime jobs and they don't go to Atlantic City on the weekend and they don't decide to go bowling one night instead of to their bar. Do you follow me? They stay there the way the dummies in a store window stay in the store window. Only they can walk and talk and feel and drink and do everything else that window dummies can't do. And that's their whole life, night after night, month after month, year after year, century after century—maybe till the end of time."

"Spooky place," said Ishmael with a little shudder.

"The people who are in that bar are happier than they could possibly be anywhere else."

"But they never leave it. Except you said some of them do, and you'd be telling me about those people later."

Mors Longa finished his bourbon and, unbidden, Charley Sullivan gave him one more, and set another rum in front of me, and an Irish for the sailor. For a long while Mors Longa studied his drink. Then he said, "I can't really tell you much about the ones who leave, because I don't know much about them. I intuit their existence logically, is all. You see, from time to time there's a newcomer in this bar that's outside of space and time. Somebody comes wandering

in out of the night the way you did here tonight, and sits down and joins the regular crowd, and bit by bit fits right in. Now, obviously, if every once in a while somebody new drops in, and nobody ever leaves, then it wouldn't take more than a little while for the whole place to get terribly crowded, like Grand Central at commuter time, and what kind of a happy scene would that make? So I conclude that sooner or later each of the regulars very quietly must disappear, must just vanish without anybody's knowing it, maybe go into the john and never come out, something like that. And not only does no one ever notice that someone's missing, but *no one remembers that that person was ever there*. Do you follow? That way the place never gets too full."

"But where do they go, once they disappear from the bar that nobody ever leaves, the bar that's outside of space and time?"

"I don't know," said Mors Longa quietly. "I don't have the foggiest idea." After a moment he added, "There's a theory, though. Mind you, only a theory. It's that the people in the bar are really doing time in a kind of halfway house, a sort of purgatory, you understand, between one world and another. And they stay there a long, long time, however long a time it is until their time is up, and then they leave, but they can only leave when their replacement arrives. And immediately they're forgotten. The fabric of the place closes around them, and nobody among the regulars remembers that once there used to be a doctor with the d.t.'s here, say, or a politician who got caught on the take, or a little guy who sat in front of the piano for hours and never played a note. But everybody has a hunch that that's how the system works. And so it's a big thing when somebody new comes in. Every regular starts secretly wondering, Is it I who's going to go? And wondering too, Where am I going to go, if I'm the one?"

Ishmael worked on his drink in a meditative way. "Are they afraid to go, or afraid that they won't?"

"What do you think?"

"I'm not sure. But I guess most of them would be afraid to go. The bar's such a warm and cozy and comforting place. It's their whole world and has been for a million years. And now maybe they're going to go somewhere horrible—who knows? —but for certain they're going to go somewhere *different*. I'd be afraid of that. Of course, maybe if I'd been stuck in the same place for a million years, no matter how cozy, I'd be ready to move along when the chance came. Which would you want?"

"I don't have the foggiest," said Mors Longa. "But that's the story

of the bar where nobody leaves."

"Spooky," said Ishmael.

He finished his drink, pushed the glass away, shook his head to Charley Sullivan, and sat in silence. We all sat in silence. The rain drummed miserably against the side of the building. I looked over at The Leading Man and the Ingenue. He was holding her hand and staring meaningfully into her eyes. The Pope, hefting a dart, was toeing the line and licking his lips to sharpen his aim. Ms. Bewley and Toulouse-Lautrec were playing chess. It was the quiet part of the evening, suddenly.

Slowly the sailor rose, and took his jacket from the hook. He turned, smiled uncertainly, and said, "Getting late. I better be going." He nodded to the three of us at the bar and said, "Thanks for the drinks. I needed those. And thanks for the story, Mr. Longa. That was one strange story, you know?"

We said nothing. The sailor opened the door, wincing as cold sheets of rain lashed at him. He pulled his jacket tight around him and, shivering a little, stepped out in the darkness. But he was gone only a moment. Hardly had the door closed behind him but it opened again and he stumbled back in, drenched.

"Jesus," he said, "it's raining worse than ever. What a stinking night! I'm not going out into that!"

"No," I said. "Not fit for man nor beast."

"You don't mind if I stay here until it slackens off some, then?"

"Mind? Mind?" I laughed. "This is a public house, my friend. You've got as much right as anyone. Here. Sit down. Make yourself to home."

"Plenty of Bushmill's left in the bottle, lad," said Charley Sullivan.

"I'm a little low on cash," Ishmael muttered.

Mors Longa said, "That's all right. Money's not the only coin of the realm around here. We can use some stories we haven't heard before. Let's hear the strangest story you can tell us, for openers, and I'll undertake to keep you in Irish while you talk. Eh?"

"Fair enough," said Ishmael. He thought a moment. "All right. I have a good one for you. I have a really good one, if you don't mind them weird. It's about my uncle Timothy and his tiny twin brother, that he carried around under his arm all his life. Does that interest you?"

"Most assuredly it does," I said.

"Seconded," said Mors Longa. He grinned with a warmth I had not seen on his face for a long time. "Set them up," he said to Charley Sullivan. "On me. For the house."

THROUGH TIME & SPACE WITH FERDINAND FEGHOOT XI

by Grendel Briarton

art: Tim Kirk



*The Feghoot is one art form;
the tall tale told in a club
or bar, another. In an unwary
moment, we asked Mr. Briarton
about combining them. . . .*

One of Ferdinand Feghoot's favorite haunts, a Time Travellers Club rendezvous where they told magnificent tales, was a saloon called The Bilge Pump. In the 1980s, however, it became infested by an odd group of science fictionadoes, writers trying to pilfer story ideas and addicts scrounging fringe benefits, all arguing bitterly about who did what first.

Old Juniper Widget, author of *Regurgitations from the Glob Galaxy*, boasted that he had once pinched H. G. Wells; even older Veronica Lewdski bragged of being the first woman seduced in a submarine—by a grandnephew of Jules Verne at that; young Pat Squirrell claimed his granddad had organized the first SF convention just before McKinley's election.

One evening, Feghoot appeared among them garbed as a Japanese Buddhist priest. "Bah!" he exclaimed. "Newcomers! I have just returned from the century of Japan's civil wars. When I started my wanderings, my friend Norimitsu the swordsmith was worried. 'Feghoot-sama,' he said, 'though a priest wears no sword, no man should go unarmed in these evil times. Allow me to forge you an *uchiwa*—a steel war-fan. With it, because of the virtue and strength of my name, you can smite any assailant.' Of course, I accepted." Feghoot produced the heavy steel weapon. "Here it is. See how he signed it? *Bishū jū Norimitsu, Chōroku 3rd Year.*"

"What's that got to do with SF?" shrilled Ms. Lewdski.

"*Chōroku 3rd Year*," said Ferdinand Feghoot, "was 1460 A.D. That is the date of the first Feghoot fan club."

ADVENTURES IN UNHISTORY: WHO FIRED THE PHOENIX?

by Avram Davidson

art: Jack Gaughan





*In my heart a phoenix flame
Darts and scorches me all day . . .
Here it begins: the work of love breeding
Among red embers . . .*
—Robert Graves*

That strange, odd book, *The Secret Languages of Ireland*, by Drs. Sampson and Macalister, which the Syndics of the Cambridge University Press caused to be printed in 1937, contains a section on the slang or cant of the stonemasons of Dublin in the early 1800s, when these workmen still spoke Irish Gaelic amongst themselves; for the most, interesting only as urban survivals of a language already beginning to die out even in the countryside. But one sentence strikes me as being worth a citation, "*Do sheabhraigheas-sa ceápaire cuilène tnúthughad* [read -adh] *carrain ag Ealp O'Laoighre* (H) 'I saw [better, have seen] pigeons bringing fire to boil meat at Dublin'—apparently a crude piece of rustic irony invented for the purpose of snubbing a boaster." I hope to point out evidence of its meaning much more than that.

Before I begin to begin doing so, I will ask that we consider the year 1934, and, of a decade which began in the Great Depression and ended in the Second World War it may be said that no year was a good year. However. Let us take our scientifi-fictional time and space scanner, and, peeping backwards, zoom in, briefly, on a few randomly sampled items. *Item*,† a theologian in Rome studies St. Cyril on men's unbelief. *Item*, a schoolboy in Australia observes a bird doing something odd with ants. *Item*, a newspaper reporter in England is reproved for bringing in a Silly Story.

Have these three items any connection, not for that year alone, and not even for that decade, but for any year and any decade? It is almost certainly true that anything in this psycho-material universe is connected with any other thing in this psycho-material universe: therefore, what are the connections which link these three items? Where shall we begin? Once again I quote Charles Fort, that intensely normal-looking man, who spent forty years collecting reports on the abnormal; and he said:

"One measures a circle beginning anywhere."

**Selected Poems* Anchor Books/Doubleday

†Strictly, of course, *Item* would never have been used for the first "item" on a list, only for the second and successive ones. But usages change. And change and . . .

He might have added, "Though in doing so, one must avoid circular reasoning. . . ."

What has any of this to do with the phoenix? And before even beginning to try to answer that very pertinent question, let us not forget the advice of Socrates: *Define your terms*. Let us begin, then, by asking, what *is* the phoenix? I have had some personal and slightly painful experience in not taking for granted that everyone knows at least something in the way of an answer, even if only via the byword, *to rise from one's ashes, like the phoenix*, for example. Some years ago I wrote a novel entitled *The Phoenix and The Mirror*, which was described by one critic as "baroque fantasy." Several years later I spoke with a young woman who had recently read it. Our conversation, it soon became clear, contained some elements of confusion; and, soon later, as we continued to converse, it became clearer that she had never heard of the legend of the phoenix, not even via the byword: no: she thought that I had made it all up. She flattered me. I hadn't. —Anyway, I hadn't made it *all* up. The book was writ by magic, but the book and its magic are not the subject of this lecture; let us begin, then, by reading an abridgement of one of the versions of this very old legend, that of Lactantius. Sometimes he is called "the Christian Cicero," a comparison which probably pleased Lactantius more than it might have Cicero; and sometimes it is said that Lactantius never even wrote the poem from which my very brief abstract is taken . . . and, if so, as to who did write it, why, I have no idea. *I* didn't.

"There is a happy spot, retired in the first East, where is the grove of the sun, planted with many a tree. There is a fountain in the middle, clear, gentle, and abounding with sweet waters. This grove, these woods, a single bird, the phoenix, inhabits, —single, but it lives reproduced by its own death. It obeys Phoebus, son of Apollo, the sun god. And when the phoenix has accomplished the thousand years of her life, and the length of her days have become burdensome, in order that she may renew the age which has glided by, full of years, she directs her flight swift into Syria, to which Venus herself has given the name of Phoenicia; and through trackless deserts the phoenix seeks the retired groves, where a remote wood lies concealed in the glens. There she chooses a lofty palm, which derives the name of "phoenix" from the bird, and where no hurtful living creature can break through, or slimy serpent, or any bird of prey. She builds for herself a nest, or a tomb, for

she dies that she might live. Rich wood she heaps together, cinnamon and balsam, cassia and the fragrant acanthus, rich drops of the tearful frankincense, tender ears of spikenard, and the pleasing myrrh. Then amidst such various odors she yields up her life, nor fears the faith of so great a deposit. But her body, though destroyed by death, is hot, and the heat produces a flame; it conceives fire, it blazes, and is dissolved into burnt ashes. And from these ashes comes a worm and this increases vastly into an egg, from which the new phoenix, having burst its shell, shoots forth, *even as a caterpillar is wont to be changed into a butterfly.* Her color is like the brilliancy of the red pomegranate when ripe, such color as the red poppy produces in the fields beneath the redly-blushing sky. O bird of happy lot and fate, born from herself! Happy she who enters into no compact with Venus, goddess of love and matrimony. Death is Venus to her; her only pleasure is in death: so that she may be born, she desires first to die. She is an offspring to herself, her own father and son, her own heir, and always a foster-child of herself. She is herself indeed, but not the same, since she is herself and not herself, having gained eternal life by the blessing of death."

Well. Not without beauty, either of description or concept. A fable. Even fables may mean something; what does this one mean? Leaving aside mythology, can we submit this to a process of absolute rationalization and come up with something? . . . something sensible, that is, and which we can believe? Try this: long ago someone saw a bird fly into a nest. Unknown to him, also in the nest was an egg about to hatch. Suddenly the bird died, the nest burst into flames, the heat of the fire hatched the egg, and—

Hmm. Not very satisfying, is it? Why does the bird suddenly die? "Natural causes?" Oh. Very well, the bird suddenly dies of natural causes. Happens all the time. Yes, but how does the nest suddenly burst into flames? "Spontaneous combustion?" Well . . . I suppose. . . . And, since I am supposing, I suppose I might as well suppose that the heat of the fire lasted just long enough to hatch the already ready-to-hatch egg, and then went out. By natural causes. But . . . But what? "The newly-hatched hatchling" couldn't have had any feathers, let alone those as red as the pomegranate and the poppy? Newly-hatched birds *have* no feathers? Oh, very well, then; if you are going to spoil my nice rationalization with such comments, I will have to admit: that part of it couldn't be true. The passer-by

must have made it up. (It is strange how reluctant we are to allow ancient and/or distant people with imagination enough to make up, simply make up a story. We make them up all the time, and often they don't mean a thing. Not a thing . . .)

But perhaps you are unwilling to admit this. Everything means something: the subconscious mind, for example . . .

Well, having brought the subconscious mind in, let us, since we have failed to rationalize this story, proceed to psychoanalyze it. It is an erection fantasy. It is an archetypal account of copulation and birth. Not rebirth. Just *birth*. We know that "die" is a colloquial word for orgasm. And we have read Jorge Luis Borges' story, *The Sect of The Phoenix*, in which immortal life was granted to the members of the sect by virtue of their performing a somewhat squalid act, into the performance of which they may be initiated even by children or servants. And we may even know that Borges himself has said that the "secret of the sect of the phoenix" is, simply, copulation.

What more do we need?

We need, for one thing, a further examination of this legend, which has from ancient times taken such a hold upon the minds of mankind. Unlike such legends as those of the werewolf, or even of the mandrake, this one, that of the phoenix, seems at least to be and to have been completely harmless. But it may be nonetheless fascinating. It might lead us somewhere. It might lead us nowhere. Let us, at least, see. Let us, for example, see what the theologian in Rome saw when he read the writings of St. Cyril when he was reading it in Rome in the year 1934. St. Cyril wrote (long, long before that year), *"God knew men's unbelief and therefore provided this bird as evidence of the Resurrection."* You see that no less an authority than one of the Fathers of the Church, far from dismissing it as a pagan fantasy, accepted the phoenix as an actuality. As had many, many others in authority done, both before and after Cyril. There were, of course, skeptics. For example:

Here is Herodotus, a most learned and well-travelled native of Asia Minor and of Greek descent, called, in case you didn't know, "The Father of History." Had he, in his travels, learned about it? He had visited Egypt and in particular Heliopolis, the City of the Sun, and wrote some comment on the Egyptian veneration of the goose. Yes, the goose. You and I might not, I think, care to venerate the goose, but we might, and then again, we might not, prefer it to venerating some other of the creatures of which the ancient Egyptians were so fond, say, the crocodile: it might certainly be safer, for

one thing. And the Father of History goes on to say:

There is another sacred bird named the phoenix. I have never seen it myself, except in pictures, for it is exceedingly rare, only appearing, according to the people of Heliopolis, once in five hundred years, when it is seen after the death of its parent. If the pictures are accurate its size and appearance are as follows: its plumage is partly red and partly gold, while in shape and size it is very much like an eagle. They tell a story about this bird . . . the phoenix is said to come from Arabia, carrying the parent bird encased in myrrh; it proceeds to the Temple of the Sun and there buries the body. In order to do this they say that it first forms a ball as big as it can carry, then, hollowing out the ball, it inserts its dead parent, subsequently covering over the opening with fresh myrrh. The ball is then exactly the same weight as it was at first. The phoenix bears this ball to Egypt, all encased as I have said, and deposits it in the Temple of the Sun. Such is their myth about this bird.

I have left out a few words. I shall now tell them to you. Herodotus says, "*Personally, I find it incredible.*" And well he might. *He*, however, leaves something out, did you notice? Nothing said here about the phoenix being burned to ashes and then being reborn out of them. Well, Herodotus didn't have to tell us everything he saw and heard. After all, how much were they paying him? Now, I would point out a few things. For one, note that the funeral of the dead phoenix took place at the Temple of the Sun; note, too, the mention of it being encased in a ball. We all know that among the many, *many* creatures venerated by the Egyptians was the scarab, a large beetle, and the scarab is shown, time after time, rolling the sun like a ball across the sky: which is why it was sacred. But what so many of our books failed to say, is that the scarab—in entymology as distinct from mythology—the scarab-beetle is a *dung*-beetle. And I can tell you, for I have seen it myself, not in Egypt, but in the Holy Land, right next-door, I can tell you that what the scarab rolls along the earth is a *ball of dung*. It forms such a ball, I saw it done out of camel dung near the ruins of the Philistine city of Ascalon, and then it gets right up on its hind legs and it *rolls* it. It keeps on rolling it along.

And why does it do this? No myth or secret, the scarab doesn't care who knows: it rolls this round ball to a place of its choice and

then lays its eggs next to it, in another and pear-shaped blob of the same stuff. And the warmth of the decomposing substance (like the warmth of the sun) helps the baby scarabs to hatch; also it provides a hot lunch without Federal subsidy.

So it seems that the ancient Egyptians seem to have given the phoenix some of the characteristics of the scarab; and, if we had never seen any scarabs ourselves we might well say that they were mythical, and that, personally, we found the story incredible: as in part, about rolling the sun, it is. They also seem to have tidied up the tale a bit. *Myrrh*, for example, is ever so much nicer than *manure*. Well, with the phoenix appearing in Egypt only every 500 years, people had lots of time to think about it, and to think of improvements. As it happens, 500 years after Herodotus, and on the other side of the Mediterranean, lived the Roman poet, Ovid, who wrote:

*All these receive their birth from other things,
But from himself the Phoenix only springs.
Self-born, begotten by the parent flame
In which he burned, another and the same.*

So, if the poetic element of fire wasn't there in the legend in the time of Herodotus, it certainly was there by the time of Ovid. And it is this part of the legend which has endured. People tended to forget about the big ball of myrrh. They tended to forget the filial piety of the blessed bird, in bringing his father all the way to Egypt for a big funeral at the Temple of the Sun. What people did tend to remember was that the phoenix built a sort of special nest, somehow caused it to catch on fire, was burned to ashes—and, out of the ashes, was, somehow, born anew. It is after all a metaphor of supreme vividness and strength, and to it was added yet another element, that is, that not only did the phoenix—which by now was not seen as being dead when its nest caught fire, but as being alive—that not only did the phoenix somehow start the fire; the phoenix was thought of and depicted as *fanning the fire!* upon which fire it was consumed . . . only to rise again. So one is not altogether surprised to read, in one medieval *Bestiary*—a bestiary being a book of beasts, with each creature being described not exclusively in terms of natural science but in terms of metaphor and allegory as well; of religion, that is—one is not altogether surprised to read the following passage: *The Phoenix. Know this is its lot; it comes to death of its own free will, and from death it comes to life: hear what he signifies. Phoenix signifies Jesus, Son of Mary, that he had the power to die*

of his own will, and from death came to life . . .

And yet, about two thousand years after Herodotus, that wise man of Norfolk (England, not Virginia), Sir Thomas Browne, M.D., did find it necessary to include these lines in his book, *Vulgar Errors of the Day*:

That there is but one Phoenix in the world, which after many hundred years burneth itself, and from the ashes rises up another, is a conceit not new altogether popular, but of great Antiquity: not only delivered by humane authors, but frequently expressed by holy Writers; by Cýril, Epiphanius, and others. All which, notwithstanding, we cannot presume the existence of this Animal, nor dare we affirm there is any Phoenix in Nature. For, first, there wants herein the definite tests of things uncertain—that is, the sense of man. For though many writers have much enlarged hereon, there is not any ocular describer, or such as presumeth to confirm it upon aspersion. Primitive Authors, from whom the stream of relations is derivative, deliver themselves dubiously, and either by a doubtful parenthesis, or a timorous conclusion, overthrow the whole relation. As for its unity or conceit that there should be but one in Nature, it seemeth not only repugnant unto Philosophy, but also Holy Scripture, which plainly affirms there went of every sort at least two into the Ark of Noah. Every fowle after his kind, every bird of every sort, they went into the Ark, and two of all flesh wherein there is breath of life. It infringeth the Benediction of God concerning multiplication. God blessed them, saying Be fruitful and multiply and let fowls multiply in the earth, which terms are not applicable unto the Phoenix, whereof there is but one in the world, and no more living than at the first benediction. As for longevity that it liveth a thousand years or more, besides that from imperfect observations and rarity of appearances no confirmation can be made, there may probably be a mistake in the compute. For the tradition being very ancient, the conceit might have its original in times of shorter compute. For if we suppose our present calculation, the Phoenix now in nature will be the sixt from the Creation, and but in the middle of its years, and, if the Rabbine's prophecy succeed, it shall conclude its daies not in its own, but in the last and general flames.

A consoling thought. —Now, as this may be generally considered

a Protestant view, and as we have already heard what might be generally considered a Catholic view, are there any Moslem and Jewish views? Indeed there are. The 1962 Encyclopedia Britannica tells us, "Among the Arabs the story of the Phoenix was confused with that of the salamander; and the samand or samandal," from whose feathers a fireproof cloth is woven—the salamander of course being able to *live in fires*, and not minding in the least being regarded as the source of asbestos—"the samand or samandal . . . is represented sometimes as a quadruped, sometimes as a bird." A four-legged phoenix! Allah-hu akbar!

Dr. Maurice Burton, the British natural historian, upon whose book *Phoenix Reborn* this Adventure depends almost (if not quite) in its entirety for reasons you will get to see; Dr. Burton says, "The Rabbins tell us that all the birds, save the phoenix, shared in the sin of Eve, and ate of the forbidden fruit. As a reward the phoenix was given, not immortality but this modified form of immutability."

Legend, we see, supported the fable of the phoenix; so did poetry; so did anyway the old time religion, although the new time religion and the new time science was doubtful. The French naturalist, Cuvier, early on in the 19th century, suggested that the phoenix was actually a pheasant . . . precisely, the golden pheasant. Certainly in ancient times the golden pheasant was not known outside of China, and its plumage in a way resembles that attributed to the phoenix. But if it was not known outside of China, how could it have become the subject of a legend most widely known in the near or middle east and the Mediterranean? Cuvier suggests that, well, somehow, one might have so to speak lost its way. It is a long way to lose, but there is nothing absolutely impossible in the suggestion. However, how often could this have happened? Cuvier seizes on this very point. It could not have happened often, he argues: hence the belief that the phoenix appeared only every five hundred (at the minimal calculation) years. I find this somewhat circular reasoning, personally. Still . . . let us for the argument agree that in the appearance of the crimson and golden pheasant lies the origin of the description of the phoenix. But how about the rest of it? There is, to be sure, a Chinese legend of the phoenix, but the comparison with "our" legend of the phoenix vanishes while you examine it. I know, because I once, briefly, lived in China, and it vanished while I was examining it. The fact is, alas, that European visitors in China, observing that the Chinese had a legend of a marvelous red bird, too, in effect cried, "*The phoenix!*" The Chinese used to be very polite to foreigners (when indeed they were not cutting them into very

small pieces), and so, very politely, they decided that this must be the proper foreign word for their own legendary bird. But that is about all.

T. H. White, better-known for his *The Once and Future King*, translated a *Bestiary*, and in his own commentary on the phoenix, says, very calmly and casually, that it was probably the purple heron, called *bennu*. He casually and calmly fails to mention that *bennu* is pronounced *veenee* in Modern Greek, and was perhaps so pronounced in some of the ancient Greek dialects, too: as for *x*, the Greeks often added it to foreign nouns ending in vowels to show that it was a *foreign-noun* and hence not requiring to be grammatically declined as Greek nouns were: example, the Apocryphal Book of Jesus the Son of Sirach. White was in his turn very probably repeating the suggestions made by other and earlier writers on the subject of this fantastic bird, the phoenix, which made itself a nest of spicy and pungent and aromatic plants and then, fire somehow being introduced into this nest, fanned the fire with its wing and perished in an ecstasy . . . only to rise from its ashes, reborn . . . "suggestions" which suggested that the bird in question was indeed a heron. What is the connection?

Here is one. The heron was known to make its nest in the tops of palm trees. So was the phoenix. In fact, and we should take note of this, in the old Greek the word for palm tree was the same as the word for phoenix. Remember that Lactantius says that the tree derives its name from the bird—but may it not be the other way around? Palm trees after all are common in hot countries, and even in those merely warm, whereas one thing which all writers insisted on about the phoenix is that it was not only uncommon, it was exceedingly rare. It does seem likelier that the *rara avis* took its name from the un-rare tree rather than vice versa. Shakespeare, in his poem, "The Phoenix and the Turtle," refers to ". . . *the bird of loudest lay*," of song, that is, as in *The Lay of the Last Minstrel*; "*Let the bird of loudest lay / On the sole Arabian tree . . .*" and so on. It is not meant to imply that there was only one tree in Arabia, but that, I think, the tree of the phoenix was unique, as was the bird. As to why the bird of *loudest lay*, or song, well, it was another part of the legend that the phoenix, as it died, sang a song of exceeding sweetness. And I suppose it must have sung loudly, as well as sweetly, because, as it proceeded from Arabia (or Phoenicia, which is adjacent) into Egypt it was accompanied by flocks of other birds: perhaps alerted by the song, as well as by the red-and-gold-glory of

the bird's plumage.

Now it may not have escaped attention that there is at least some resemblance between the words *phoenix* and *Phoenicia*. The matter is complicated, and I shall proceed to complicate it still more. The Phoenicians did not call themselves Phoenicians, but many people are commonly called by names other than their original names for themselves: the Hungarians call themselves *Magyar*; the American Indians, for example, never thought of themselves as "Indians," and nowadays many of them prefer to call themselves "Native Americans," as though the rest of us were all born somewhere else . . . and, for that matter, as though the word "American" were a "Native American" word . . . which it is after all *not*. However, the ancient Greeks it was who called the coastal people of what is now Lebanon and Syria by the name of Phoenicians. It means The Red Ones, so to speak; from the Greek *phoinos* or *poinos*—remember the *Punic Wars*? They were the wars between Rome and Carthage, a Phoenician colonially-founded city in North Africa. And we are usually informed that this name of "Red Ones" was given because the Phoenicians were sunburned by their long voyages at sea, which they made to bring the Greeks not only the alphabet but such trade items as glassware and copper (which is, by the way, *red*) and the famous Phoenician Tyrian dye. Which is almost invariably referred to as "purple" dye: as a matter of fact its colors ranged quite a way along the spectrum, and included blue *and* red.

" . . . and red . . . "

The phoenix was also red. But the purple heron was, well, *purple*. I have never seen a purple heron, but I have, in Sausalito, California, seen a blue heron. Several. They are a sort of blue-grey. And some authorities are insistent that it is a mistake to connect the *purple* heron with ancient Egyptian bird-worship. It was the *grey* heron, they say. However, there is no grey phoenix. I have cited T. H. White in his *The Book of Beasts*, now let me cite Richard Carrington, in his book, *Mermaids and Mastodons*. He begins by quoting our old and so well-read friend Pliny the Elder, who said that the body of the phoenix was "a deep *red purple*" and that on its head it had a "tuft and plume." Carrington points out that the purple heron does have anyway a *plume* on its head, indeed, and that it "was one of the symbols of the sun god at Heliopolis"—which, remember, was the very place whither the phoenix brought, in one version, the body of its father for burial. T. H. White seemed to see no further problem, and even Carrington glides away from the subject; but there is one obvious and even matter of fact objection, and that is that the heron,

far from being seen only once in a thousand or even five hundred years, is seen all the time. Something seems to have been lost in translation. But I am not yet ready to leave Carrington.

"In prehistoric times," he says, "when men sought gods in the forces of nature, a bird deity was the obvious choice to symbolize the sky, for birds were the only creatures who naturally belonged to that element." One had not to be a theologian in order to take the tempting trail to either symbolism or allegory—which are, after all, brother and sister—in an attempt to, so to speak, lift the Veil of Isis . . . in other words, decide what these ancient stories really meant; and the most popular method was to declare any one of them "a nature myth." And of these, *the* most popular was to say that something, anything, was "a solar myth." Applying this to the phoenix, let us admit at once, or, anyway, almost at once, that the phoenix lends itself really very easily to definition as a solar myth. It is red and yellow, it *does* die and it is reborn—all, just like the sun. But to go back to the myth of the scarab, which none of these writers whom I have quoted seems to have done, the Egyptian myth of the scarab which rolled the great globe or ball of the sun across the sky, this is not as glamorous as the Greek myth which has Apollo driving the sun as a chariot across the sky. How natural to assume, as many of the ancients did assume, that it was from the iron shoes that shod the chariot-horses of the sun that there came sparks, and that it was these which ignited the funeral pyre of the phoenix. It seems, somehow, to make sense . . . almost . . . until we pause, and realize that, after all, there are no horses . . . up there in the sky. There are no stones up there in the sky, either, hence, of course, stones cannot fall from up there, down to *here*, to earth. Hence the wise men of former times were quite right to deny the existence of meteorites: and they did deny it, and went right on denying it, well into the 19th century. Thomas Jefferson denied it, and when a couple of members of the Harvard faculty announced all the evidence, Jefferson said, "I would rather believe that two Yankee professors have lied than believe that stones fall from the sky. . . ." He was a great man. But here he was wrong. And, perhaps, if you think that what I mean to imply is that it was meteorites, "shooting- [or falling-] stars," which ignited the nest of the phoenix—well, perhaps you, too, may be wrong.

And when we consider the melody of the dying phoenix, this inevitably brings to mind the legend of the dying swan . . . and its "swan song" . . . and of course it was also said that swans it was that drew, sometimes, the chariot of the sun . . . and *not* horses. After all, a

singing horse would be a bit much.

However, I am not yet finished, really, with the scarab. My typewriter made a mistake right at this point and wrote, for scarab, *acrabs*, and *acrab* is the Hebrew and perhaps the Arabic word for scorpion. I intend to do nothing whatsoever about this; I shall return, as I said I would, to the scarab, the insect of the sun. Insects lay eggs, and the eggs turn into caterpillars* or grubs or maggots, or, well, *worms*; and in the case of the phoenix the process was reversed: the worm turned, indeed: it turned into an egg, and the egg into another phoenix. If we know nothing of birds, would we believe that they produced eggs? If we knew nothing of eggs, would we believe that they produced birds? Down to the age of Shakespeare, a certain European goose was never known to produce an egg; its goslings were never seen by man, and the universal explanation was that it hatched at sea from a certain crustacean, hence its name of *barnacle goose*; evidently the young barnacle looked vaguely goose-like enough to support such a story. Not until very late in the 16th or very early in the 17th century was the immense and frozen archipelago called Spitzbergen, or Svalbard, discovered, or re-discovered. Men went there for whales, and they found the whales, but they also found something else, something seen more-or-less for the first time by the eyes of man, namely the perfectly normal nests and eggs of the so-called barnacle goose, there above the arctic circle. The argument *ab silentio* on which this almost nursery rhyme had been based was destroyed by the squawking of, may I say it?—Mother Goose. . . .

But no voyage to what was then called "the East Greenland seas" destroyed in the slightest the mysterious veil, and perhaps it *was* the Veil of Isis, which hung in tantalizing gauzy drapes all round about the fable of the phoenix. The sign of the phoenix appeared in the elaboratorial MSS of the alchemists and hung over the doors of the apothecaries; the 17th century gave way to the 18th and the 18th to the 19th, the sign of the phoenix was employed even by, of all antic notions, fire insurance companies!—but the mystery of the phoenix remained unsolved.

John James Audubon.

Everybody knows the name of Audubon. Not everybody knows, however, that he once planned to go into the steamboat business on the Ohio River with a young English immigrant named Keats—a

*f.n. See Lactantius's poem.

brother, as a matter of fact, of the poet Keats. The steamboats, however, so to speak never got off the ground; Audubon probably lost his money, Keats-in-America certainly lost his money, and Keats-in-England wrote to him, "I am afraid that Mr. Audubon is not a very honest man." Winona McClintock, another and a later poet, wrote, "Keats had TB, Shelley drowned, Shakespeare lies in the cold, cold ground." Audubon, meanwhile, not much knowing what else to do, began to paint birds. Before long he had enough for a book, but before long, too, he realized that there weren't enough customers for it in America; he went to England (we may suppose he did not bother to call upon the Keats family for a subscription); he went to Scotland. In Edinburgh he called on, among other people, a prominent local surgeon. I quote from memory: "He came to me directly from his dissecting-room, with the blood still wet upon his hands. His manner was most gentlemanly and agreeable and he promised to help me in my endeavors as most he could." The surgeon, I will now reveal to you, was a Dr. Knox; in fact, he was *the* Dr. Knox, and the source of the bodies in the dissecting-room (whose blood was still wet upon his hands) will not bear examination; so let us examine it. As bodies were essential to the study of medicine and surgery and as the only bodies available for the purpose were those of criminals who had been hanged, a supply which had begun to dry up anyway, a professional corps (shall we say) had grown up, of graverobbers. They sold their robbed bodies to the medical profession. And they were known, not as Dickens's Jerry Cruncher preferred to be known as, to wit, Agricultural Character, but as "resurrection-men!"—shades of the phoenix! Eh?

Times had been very hard in Ireland, and, God knows they must have been very hard for people to migrate thence to Scotland! We well know that most Irish people are the salt of the earth, descendants of kings and princes, pious, sober, and learned; however, two of them were not any of these things: one was named Burke and one was named Hare, and in order to make the rent on their shall we say studio apartment, called in the pawky Scots dialect a "but and ben," and located in Tanner's Close, I regret to say that they proceeded to murder the many guests who found hospitality with them, and whose delectable corpses they sold to—but surely you know the verse? I wants to make your flesh creep, I'll recite it to you:

*Up the Close and doon the stair,
But and ben wi' Burke and Hare:*

*Burke's the butcher, Hare's the thief,
And Knox the boy who buys the beef.*

From Keats at one end to Burke and Hare at the other, Audubon was certainly connected with a lot of *very* interesting people, one way or another. And, taking another way, let us consider what *else* he had been doing: he had been watching wild turkeys and what *they* had been doing. This was in the good old USA, in one of the eastern states, perhaps Kentucky; I now quote Maurice Burton, from whose book *Phoenix Reborn* I have quoted before: he says that Audubon "spoke of [the turkeys] rolling themselves in deserted ants' nests," and then he quotes Audubon for the reason:

... to clear their growing feathers of the loose scales and prevent ticks and other vermin from attacking them, these insects being unable to bear the odor of the earth in which ants have dwelt.

Well, this is interesting, this is *very* interesting, because, do you remember, one of the random samples which we took of the year 1934 showed "a schoolboy in Australia seeing a bird doing something odd with ants. . . ."

This, however, lay a bit in the future of the year 1847, when Mr. Philip Henry Gosse published the book *Birds of Jamaica*. One of these birds is the Barbados blackbird, also called the tinkling grackle—I think that only the English could come up with a name like "the tinkling grackle"—yet be that as it may: Gosse described how the birds would often go and gather limes bruised by falling off trees, then stand on one foot and rub the oozing fruit under the opposite wing; then switch to the other leg and apply the lime beneath the wing on the other side. Was the blackbird (or, if you *insist*, the tinkling grackle)—was the bird by any other name concerned with possible under-*wing* odor? Burton says, "This 'bathing' might go on for an hour, and was presumed to have as its aim the application of the aromatic juice of the lime to the feathers."

Odd.

Thirty years later came a report that "a tame crow . . . was seen deliberately to take its stand on an anthill and allow the ants to crawl over its plumage, seize parasites in their jaws and bear them away." This sounds a little like the accounts of the small birds which are alleged to roam freely upon the crocodile in order to pick things from its teeth. Burton says, referring to the bird accounts, "During

the next sixty years there were a number of similar stories published in a variety of journals, scientific and otherwise, but no self-respecting ornithologist believed them. They were, in fact, treated, like the myth of the phoenix, as wholly fictitious."

The year is now 1934.

Peter Bradley, an Australian schoolboy, writes to a Melbourne newspaper to say that "he had noticed . . . starlings . . . picking up ants and stowing them away among their feathers;" and this letter is read by A. H. Chisholm, who is working on a book called *Bird Wonders of Australia*. Chisholm does not altogether believe the story, but, Pete being persistent, Chisholm is impressed enough to add a note about it to his book. (I now switch from the historical present to the past.) The note was read by Professor Erwin Stresemann, in Europe, who published it in a monthly magazine about birds: letters poured in, not just from schoolboys, either; and in a short time the practice was acknowledged not only to exist but to exist in many different kinds of birds. It was named *anting*. It still is called *anting*, although it is now clear that the birds which *ant* do not always use *ants*; but we will get to that.

The bird, as observed, evidently, hundreds of times by now, picks up an ant in its bill, and, spreading its wings, rapidly rubs the ant along (usually) the inside of its wings, which are widely extended: "In this position the quills or primaries," i.e. the primary feathers, "of the wings are fanned." A Canadian observer, the ornithologist Roy Ivor, is quoted as saying that when the anting process is "at its height the birds seem to be afflicted with an ecstasy . . . toppling on to one side, or in other ways losing their balance." A similar report comes from Høger Poulsen, whose observations at the Copenhagen Zoo include those of "152 birds representing 85 species belonging to 24 families;" he reports that the birds sometimes rub the ants on their tails and shoulders as well as wings, often becoming so absorbed in the task as to lose balance and fall over. These observations include birds in the wild as well as in captivity, and well might the question be asked, "Did birds only start anting rather recently?" The obvious answer must be, Certainly not; and to the next question, Then why was it not noticed before? The answer, not so obvious to those who have not seen anting, is that it is all done very quickly, far more quickly than it takes to describe it: probably no trained ornithologist noticed it because none was looking for it; and, such is the general attitude of specialists of all kinds, observations reported by non-specialists (who *had* noticed it) were brushed aside. Stories of birds applying ants to their feathers were regarded by

ornithologists much as herpetologists regarded (and regard) stories that snakes form themselves into hoops and roll down hills, or suck the milk from cows' udders. Old wives' tales, we call them.

However, young Peter Bradley was wrong in believing that the birds "stow" the ants in their feathers, they do not, they never let go of the ant till they have finished rubbing it; then they either eat it or, simply drop it.

Furthermore, close observations show that the ants are not used to eat the smaller parasitical insects, bird-mites or bird-lice, which are usually found in plumage; and, in fact, in implying that young wild turkeys wallow in old ant nests because their parasites will drop off, not liking the smell of ants, Audubon was also wrong. In which case, or cases, why do the birds who ant, *ant*? I have said a bit before, that, although the name of *anting* is applied to such behavior, not ants alone are used; we have seen the custom of the Barbados blackbird (or *tinkling grackle*, if you prefer; I do not) in using bruised limes for the purpose of rubbing its feathers. Are any other items used? Oh you bet. Herewith a partial list: Pine needles, pepperina berries, English walnuts, "lemon pulp, lemon juice, vinegar and beer, orange juice, choke berries and sumac berries, cigar stumps, roaches, shrimps, moths, mothballs, tobacco pipe ashes, chimney smoke, a smouldering log, apple pieces or apple peel, pansy blossoms, hot chocolate, soapy dishwater, cigarettes . . ." Perhaps this list is long enough, although, probably, other items are also used. It is evident that although the practice of anting may be innate or instinctive, the items used are fortuitous: that is, a bird may engage in anting with whatever it may chance to find around.

As I so often quote Maurice Burton as the prime source for this Adventure, I will say that I know of him only that he is an Englishman, a doctor of science, and the author of several books, including *Infancy in Animals*, *Animal Courtship*, and *Animal Legends*, as well as *Phoenix Reborn*. It is in connection with his pet birds Corbie, Jasper, and Niger, that he came to write the book which, brought to my attention by Professor Robert Maccubin of the College of William and Mary, inspired this Adventure. But before going into that, let us take our scientifiational time-and-space scanner, and zoom back to the year 1934.

Again.

A reporter on an English provincial newspaper is reproved for bringing in a Silly Story.

Silly Stories are most common in what newspapermen call The

Silly Season, usually the Dog Days of August, but can turn up all around the year, any year, and may range from (I heard this one phoned in one night to the office of the old San Francisco *News-Call-Bulletin*), a phantom aeroplane crashing into the Golden Gate Bridge (there was no aeroplane and, hence, no crash: there was a bridge, though) to a cat reported to have walked 30 miles between its old home and its new (the cat had walked perhaps the three miles actual distance between the two houses, or, perhaps, had simply been away a long time on business of its own). Flying Saucer stories are usually Silly Stories, but not always. Stories of elephants being dragged underwater by giant sharks are invariably Silly Stories, with the added factor of originating too far away to be tracked down; stories of people who are 120 years old are almost invariably Silly Stories—as Randall Garrett once said to me, "People over 112 years old always have in common that they have no birth certificate." To which I might add, that if they do, it is almost certainly someone else's birth certificate.

This particular Silly Story was about a house which caught on fire because a bird had picked up a lit cigarette and carried it to its nest in the rain-gutter of the house in question. It was explained to the reporter that such stories, though not terribly uncommon, were terribly untrue, because birds do not pick up lit cigarettes, let alone carry them off to their nests; cigarettes being inedible. See?

I hope you see. Rocks do not fall from the sky, because . . .

Burton's theory is that anting is an extreme form of preening and that it is related to an extreme form of sun-bathing. The bird does it because it *feels good*. I might go as far out on a limb as any bird, and suggest that it may be remotely related to what in human beings is called fetishism . . . but I won't press this point. Bird-anting seems also related to aspects of bird-bathing; in both instances the bird seems to go into an ecstasy . . . sometimes. And now I shall ask you to recall that Lactantius, in his poem on the phoenix, says that it bathes the day before it burns. I shall ask you also to recall how many of the substances (or items, rather) with which birds engage in anting are or might be considered "aromatic," or, anyway, strong-tasting or strong-smelling substances: Pine needles, pepperina berries, English walnuts, limes, lemons, vinegar, beer, orange juice, cigar butts, shrimps, mothballs, tobacco ashes, smoke, apple, hot chocolate, cigarettes . . . Add to the adjective *aromatic*, the adjective *spicy*, and something like a revelation occurs. *Of what did the phoenix build its nest?* According to all the old reports (and there are after all no new reports) it built it from such items as cassia,

spikenard, cinnamon, balsam, frankincense and myrrh. . . . In other words, out of substances aromatic to the smell and spicy (or pungent) to the taste. And, if balsam and frankincense and myrrh sound ever so much more romantic than tobacco, beer, vinegar, lemon, lime and orange, recollect that legend placed the phoenix in Arabia and that southern and southeastern Arabia was of old the chief source of frankincense and myrrh and that it lay along the trade-routes along which passed such other odoriferous items as cinnamon, cassia, spikenard, balsam; one employs what may be available, whether one is a phoenix, or not. As to the rather obvious matter that anting, whatever it may be and whatever motive it may have, is not, repeat *not*, nest-building, I can only reply, No it's *not*. Is it.

Birds . . . sometimes . . . go into what we term "an ecstasy" whilst anting with ants . . . they go into this ecstasy . . . sometimes . . . whilst bathing or preening . . . sometimes this happens when they have merely *seen* ants and this happens sometimes when they are applying a variety of other items to their bodies and sometimes when (though they make all the motions) they have absolutely nothing at all in their beaks; and in the state which we, perhaps anthropomorphically, term *ecstasy*, they tremble and extend their wings and make odd and curious movements and sometimes whilst doing this they fall down. Don't they? Yes they do.

We human beings sort of regard the prime cause of ecstasy as sexual, but there are many other causes. However, is anting and its frequent resultant ecstatic state connected with sexual activity—among, that is, *birds*? Evidently it is . . . but not terribly closely. *Some* of the movements are similar to those observed in mating dances. But only *some*. So we must look for other cause or causes. And we must also remember that old Lactantius told us that the Phoenix bathed *before* it sat upon its magic nest and burned and died, whereas Burton and others tell us that birds who ant frequently bathe *after* they ant. Well, Lactantius and others got the order of the egg and the worm wrong, so another error in the matter of sequence need not astonish us. Onward. Do birds perform in this ecstatic manner whilst sunbathing?

Sometimes.

And *do* they bathe, afterwards?

Sometimes.

We do say . . . sometimes . . . of aromatic or spicy substances, certainly of pungent ones, that, if too "strong," they "*burn*." Pliny the Elder complained of the loss of currency to Rome in importing im-

mense quantities of pepper from India, when the pepper's sole function was, he said, "to provide a slight burning sensation to the tongue." Perhaps something of the sort happens when a bird ants, perhaps the formic acid in the ants and the essential oils in the fruit rinds or whatever provides somewhat of a burning sensation which the bird finds intensely pleasurable. The same thing might be said of the heat of the sun whilst the bird is sunbathing. And the same thing might be said of the anting birds which pick up lit cigarette butts and apply them to themselves, or which ant in the smoke of smoldering logs or upon the tops of chimneys, or even in the steam of kettles. The common factor, is, then, *heat*.

However, what of the birds who go into wing-flapping ecstasies while preening after being rain-soaked when it is not hot, or whilst bathing in water on a cool day? Ah . . . there you have me. And there, I believe, you may have everybody else concerned in this whole complex subject. The picture, you see, is not complete. And, incomplete as I have shown it to you, there is nonetheless something left out. Something of intense importance.

Maurice Burton had a pet rook, a bird closely related to the crow, Corbie was its name. This family of birds has long been known to be rather intelligent, although it did not seem particularly intelligent of Corbie to dance in front of the fireplace when the logs were burning—so close that the fireplace had to be screened. Corbie was subsequently seen to turn on the electric heater for his pleasure and even to pick up wooden matches in one claw and peck them until they burst into flame. Then he would hold the matches one by one under his wing, and *ant*. Now, Corbie was not the only bird that Burton had, and one of the others was a bluejay named Jasper. A lit cigarette butt came within Jasper's reach one day: he played and toyed with it a moment, then, *"Jasper went into the full anting display in a most dramatic fashion. He brought his wings forward to their full extent, the wings curving inward in front of the body, so the tips almost met in front. . . . The magnificent coloring of his wings was shown to the full and his whole pose was statuesque . . . this display lasted . . . less than a minute."*

Remarkable. *To say the least.*

Now, as Dr. Burton is a scientist, he desired to obtain scientific evidence of these displays, and a photographer was on hand to do so. A second rook, named Niger, belonged to the Burtons, and—but let me bring in Burton's own words again. "A rook," he says, "is a moderately large bird with a glossy black plumage. When he 'ants,' this plumage is displayed more fully than at any other time. The

effect is magnificent and spectacular. It is, therefore, quite unmistakable." However, Niger refused to ant . . . with ants, that is. And so the photographer, who was, as a matter of fact, Dr. Burton's daughter, remembering how other birds would ant with embers and matches and burning cigarettes, decided to try something else.

She set fire to a small pile of straw.

Niger *"jumped onto the fire, spread his wings . . . snatched at the flame with his beak . . . it seemed incredible that a bird could stand among flames with the tongues licking up to his outstretched wings without sustaining injury. . . Niger became wildly excited, hopping around . . . snatched at the burning straw with his beak, at the same time bringing his wings forward . . . and the head constantly in movement snatching at the smoke, snatching at the flame, and passing the beak up and down inside the wings. . . . Yet there was no sign of singeing and no smell of burnt feathers."* I should imagine that the film which showed this must be one of the most fascinating ever made and I would rather see it than any Hollywood or "underground" film ever filmed. Did the film come out when it was sent to be developed? It certainly did, and it showed, in Burton's words, "the vigorous flailing of the wings, there was something seemingly miraculous . . . about the performance . . . [the bird] would wallow and gyrate over the flames," and saliva formed in its beak. Burton showed the film to the London Zoological Society, and the chairman said, after the showing ended, "Of course, *it is the answer to the phoenix legend.*"

After this, almost anything one could say would be an anti-climax.

We do not know *why* birds behave this way, but we know they *do*. We do not know *who* the people were who first saw and spoke of the bird which gathered aromatic plants to make use of them, but we know that they really *must* have seen this. We cannot say who first observed a bird in a burning nest, fanning the flames with its wings, but we can say that they actually *saw* such an incredible sight. And if they also saw the same bird, in ecstasy, falling over or falling down, and, the rest of it being hidden from them by smoke, if they thought that the bird had burned to death in the fire, why, one cannot blame them for thinking so.

Where did the bird, in ancient times, before the time of matches, obtain the fire? From another fire, it would seem. From any other fire, for any burning ember or piece of wood with one end glowing would do. And if the scene was not seen often, and if indeed it was seen extremely seldom, why then, how natural to believe that such a scene took place only every five hundred or a thousand years!

As for the *benu*, the blue heron, which nested in Egypt in the top of the *benu* palm tree, why, it seems possible that anyway the name of phoenix came from that, possibly from a purely homonymous resemblance. As for other possible connections, well . . . who knows? What bird, then, was it, which, so gorgeous of plumage, gave its physical appearance to the phoenix of legend? Phoenix red and gold and purple and blue and . . . Parrots have been suggested, and golden pheasants, and the bird of paradise and the blossom-headed parakeet of India and . . . It is useless, it is vain to ask what bird with even merely red and blue and gold plumage might have been the original phoenix . . . or so *I* think . . . *I* think that, surely, the name does not come from the bird, but from the blue-gold-red *fire* the bird began: it was the, so to speak, *plumes of fire*, which were *phoinikos*, or, glowing-red. For, after all, the phoenix is, above all, the *firebird*. It is the bird of fire. It is the fire of life.



THE SF CONVENTIONAL CALENDAR

by Erwin S. Strauss

This is the time of year to go to a local con(vention) to prepare yourself for the WorldCon. Get out for a social weekend with your favorite SF authors, artists, editors and fellow fans soon. For a longer, later list, an explanation of cons, and a sample of SF folk-songs, send me an addressed, stamped envelope (SASE) at 9850 Fairfax Sq. #232, Fairfax VA 22031. The hotline is (703) 273-6111. If a machine answers, leave your area code and number and I'll call back at my expense. When writing cons, enclose an SASE. Look for me at cons with an air-powered keyboard as Filthy Pierre.

Kabla Khan. For info, write: 847 Devon Dr., Nashville TN 37220. Or Phone: (615) 832-8402 (10 am to 10 pm only, not collect). Con will be held in: Nashville TN (if location omitted, same as in address) on: 8-10 May, 1981. Guests will include: Stephen ("Dead Zone") King, Forrest J. ("Famous Monsters") Ackerman, Andrew J. Offutt, Jack Gaughan.

MuCon, (02) 511577. Sydney, Australia, 8-11 May. Lorry Niven. Run by U. of NSW SF Society.

ElectraCon, Box 1052, Kearney NE 68847. 15-17 May. Ed Bryant, S. Carnival, D. Patterson.

V-Con, Box 48701 Seattle Sta., Vancouver BC V7X 1A6. 22-24 May. V. McIntyre, J. Gustafson

DisClave, 4030 6th St. S., Arlington VA 22204. (703) 926-6067. 22-24 May. Big little con.

ConQuest, 4228 Greenwood Pl., Kansas City MO 64111. (816) 753-2450. 22-24 May. Poul Anderson, James Gunn, C. J. Cherryh, W. A. Tucker, Lee Kilbough, O. Thompson, J. Kessel.

GrimCon, Box 4153, Berkeley CA 94704. 22-25 May. SF & fantasy war and role-play game con.

AmberCon, Box 947, Wichita KS 67201. 29-31 May. Ed Bryant, Bill Warren, Walt Liebscher.

X-Con, 1743 N. Cambridge, Milwaukee WI 53202. 12-14 Jun. L. S. & C. deCamp. Amateur films.

CosmoCon, c/o McGue, 34 Halsey, Hutchinson KS 67501. (316) 663-3799. 13-14 Jun. James Gunn.

Advention, Box 130, Mardon 5070, South Australia. Adelaide, Australia, 13-15 Jun. Frank ("Oune") Herbert, John Foyster, John Ossian, K. U. H. Widdershins. Australian nat'l con.

MidWestCon, 3953 St. Johns Terr., Cincinnati OH 45236. 26-28 Jun. Where old-timers unwind.

WesterCon 34, Box 161719, Sacramento CA 95816. 4-6 Jul. C. J. Cherryh, Grant Canfield.

InConjunction, 1415 N. Somerset Av., Indianapolis IN 46222. 3-5 Jul. Philip Jose ("Riverworld") Farmer, Wilson Arthur ("Ice and Iron") Tucker, old-time fan Ray Beam.

EmpiriCon, c/o TESSFA, Box 682 Church St. Sta., New York NY 10008. 3-5 Jul. NYC's big con.

Archon, Box 15852, Overland MO 63114. St. Louis MO, 10-12 Jul. Fifth Annual St. Louis con.

High Plains, 1208 W. 16th, Amarillo TX 79102. 10-13 Jul. Robert ("Cold Cash War") Asprin.

NECon c/o Booth, 67 Birchland Ave., Pawtucket RI 02860. Bristol RI, 24-28 Jul. Peter Straub, Les Daniels, Pete Pautz. \$50 for room, board & registration at Williams College.

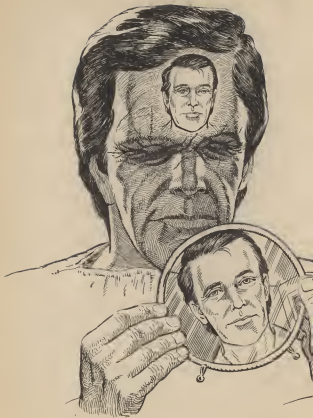
ParaCon, c/o Caste, 425 Waupeland Dr. #24, State College PA 16801. 24-26 Jul. Wm. Tenn.

B'hamacon, Box 57031, Birmingham AL 35259. 28-30 Aug. DeepSouthCon. En route to Denver.

Denvention II, Box 11545 Denver CO 80211. (303) 433-9774. 3-7 Sep., 1981. C. L. Moore, C. Simak, R. Hevelin, Ed Bryant. WorldCon. \$45 till 15 Jul. East Coast train group planned.

WesterCon 35, Box 11644, Phoenix AZ 85064. (602) 249-2616. 2-5 Jul., 1982. Gordon Dickson.

ChiCon IV, Box A3129, Chicago IL 60690. 2-6 Sep., 1982. A. Bertram (Rim Worlds) Chandler, Kelly Freas, Lee Hoffman. The 1982 WorldCon. Go to other cons to prepare for WorldCons.



OTHER WELLS, OTHER SAINTS

by Scott Elliot Marbach

art: Frank Borth



At thirty, Mr. Marbach is single, with neither livestock nor exotic hobbies. His list of former employments would be long, but he mentions insurance adjustor, prison legal counselor, and actor as a representative sample. He currently lives in Birmingham AL, and this is his very first sale.

My eyes were gone. No matter what I said or who I tried to argue with, I could not escape it. My head was swathed in bandages and if I closed my eyes (which were gone) I could see in uninvited detail the last thing I *had* seen: a windshield about to go nova.

It was to defend me from this creeping vision that I was kept sedated for the first week after the accident, although as the truth began to sink in and I began to sink into a grim sort of acceptance, the doses were gradually lessened. By the end of the second week I got a shot only at bedtime. Still, my wits were not at their sharpest; if they had been, I might have said no. I might have sent Dr. Medwyn on his way and stepped out into the darkness alone.

He came in the early evening near the end of visiting hours. Rhys Medwyn was a man whose visits you did not refuse. He was the chief of psychiatry at the medical center and a close friend of Henry Stone, the head of the language department at the university where I would no longer be teaching. But I knew him only casually as a recurring face at faculty cocktail parties. I could not guess what he wanted with me.

He made pleasantries, sounding very much like a man who was avoiding the point but who would get to it in his own good time. After touching on the weather and the chances of our various local teams he paused, and I sensed business coming on.

"I wondered," he said in a very reasonable tone, "if you were planning to teach again."

I laughed out loud, hard metallic yocks, frightening myself with the bitter sound of it.

"Henry says you're a valued member of his staff," he continued undaunted. "I think he'd hate to lose you."

Blind as I was, the writing on the wall burned bright and final. I wondered that Medwyn did not see it.

"About these bandages," I said, trying not to shout. "I left my eyes on the dashboard of a sub-compact somewhere out on route 27. So as for teaching . . ."

Medwyn breathed in slowly. I could almost hear him counting to three. "But—do you still *want* to teach?"

A classroom full of students—I summoned up their faces: Pakistanis, Yemenites, Iranians, the sons and daughters of beggars and oil sheiks, the brains of their nations, lacking only the English language, without which a first-rate Western education was beyond their grasp. I thought of them marching, placards held high, paper bags over their heads, crying "death" to whomever presently required dying. I gave them the words for that. Remembering the challenge, the quest for communication, I smiled. Without eyes . . .

"Yes! I still want to teach. I want my whole life back! That doesn't change anything."

"Nothing stays the same for very long, David. Even if it appears to. Your very perception of something as changeless changes it. But I'm wandering. In a large medical facility there are always things popping up. There may be a way. But no guarantees."

I groaned, not liking the sound of it. Precisely, I did not like Medwyn's hopeful tone.

"I understand that you are divorced," he said, "and that you have no immediate family nearby. You live alone?"

"You seem to know."

"So. You live alone." He paused and I could feel him trying to frame his next statement. "David," he said softly, "one way or, another, you will have to make a life for yourself."

"Seeing Eye dog," I snapped. "White cane. Rehabilitation. Yes, I know all about it."

"In time, perhaps." He sounded as though he hated the prospect as much as I. "We could put that off, though."

We?

"David, I would like you to participate in an experiment."

No, I thought. "What sort of experiment?"

"There's a person I would like you to work with."

Absolutely not.

"A therapist?"

"No," he said, clearing his throat. He smokes too much, I thought ridiculously. But the aura of tobacco about him was comfortable, and I hadn't been allowed a cigarette since the accident. "This is a patient of mine. Look, David, it's just possible that you will be helping him as much as he helps you. If things work out," he added.

It was a generous offer to let me be brave and noble. It stank. "Okay," I heard myself say. There did not seem to be anything left to lose.

He let loose a breath held longer than I would have thought possible, but even over the edge of his excitement his voice became reliably clinical. "Good, then. Now I know that after the build-up this may seem cruel, but trust me. The less you know at the very beginning, the better chance we'll have, so I'll say no more for now. Tomorrow, I'll introduce you to Joe."

A nurse swept in to change the dressing on my facial wounds, and I realized that visiting hours were long over. This had been business, then, from the beginning. Medwyn left. Supper came, and later I took my shot, giving up to the drug the anxiety of anticipation that had settled in like a new pair of eyes. I fell swimmingly asleep to the audial miasma of footsteps, trundling gurneys, and hushed conversation: the sundry hospital sounds that had become my world.

Dreams fled unremembered. I awoke. This was my worst time, waking, having to learn all over again that I was blind. I sat up sharply, my breath tearing ragged edges until I remembered where I was. *Wait*. Something had changed. Even as my remaining senses conspired to confuse me, I could feel the gravity of another person in the room. It came from my left where before there had been an empty bed.

Coffee was in the air, somewhere beneath the omnipresent antiseptic smell. It was morning. He must have been wheeled in during the night. I sat very still and listened; he was sleeping. There was a small watery snore and a sucking sound. His thumb in his mouth?

Joe? I silently formed the word on my lips as I pressed the call button for the nurse. *Tomorrow, I'll introduce you . . .* If he awoke now I'd have to introduce myself. Where was the nurse?

Then the room was flooded with footsteps. I picked out Medwyn's voice and also Henry's, which surprised me. From all the shuffling I guessed there were others but they were not speaking.

"David," Henry began, but Medwyn cut him off.

"Softly," he said. "We don't want to awaken Joe just yet. Good morning, David." So it *was* Joe. Why had they slipped him in while I was sleeping?

"I'm not enjoying this mystery," I whispered. "I would like to know what's going on." I gestured off to my left. There was a rustle and a heave of linens from the other bed and I knew that Joe was awake.

"Hi, Dr. Medwyn."

A child? But the voice was a man's, only the intonation seemed boyish.

"Joe," said Medwyn, "this is David. Remember? I told you about David."

"David?" puzzled Joe. Then a cry of pleasure. "David! He's the one? I can do it for him? Should I?"

Medwyn must have nodded for I heard a small squeal of joy, and then—

Spasm. My body went rigid, objecting to something I did not understand. And then I *saw* them. I saw them almost without knowing I did. Medwyn, his face open with expectation. Henry, brow knit with concern. There was Fraiman, my attending physician, and, standing beside him, a nurse and two orderlies. The green of the room was ablaze. I saw it all in a stroboscopic flash which froze the action, the looks on their faces, even as they continued to move.

Sound pushed its way out of my gut. "Unnnhh."

I saw. The room was tilted at a crazy angle and now I saw the man in the other bed who must be Joe, also with bandages on his face. Blind too, I thought, somehow horrified. Another strobe flash, changing the tilt of the room so that all I could see was the man in the bed. Now the image began to fade gradually, darkening down against the glowing green backdrop, modulating back to black. And with this I could feel a pressure where one does not usually feel pressure. If there is one place in your brain, one precise location that is the mind, then the pressure was there, probing, fingerlike, seeking access. It was all falling to shadow now as I tried to make sense of it, to make sense of the man in the other bed, this Joe who was "doing it."

In the last breath of the vision I felt myself raising my arm to reach out to him and could see that he was reaching out to me. Then I could see no more. It was gone, leaving only a faint phosphorescence in my thinking places as I sat there with my arm held out, the tension of the muscles violin tight. I could reach forever. The man on the bed with the outstretched arm and the bandaged face was someone I knew. Sight and instinct came together.

It was me.

I cried out. And I passed out, still reaching.

Without the element of surprise, Dr. Medwyn explained later, Joe might not have gotten through to me. The mind, he said, has a series of natural, reflexive defenses against extrasensory input. If my partnership with Joe were to bear fruit, I must learn to master these defenses. If I could, then Joe would fill my mind with sight. We hoped.

"You're still resisting," chided Medwyn.

"I can't *feel* the resistance," I protested.

"Pay attention," he commanded. My fingers were moist with electrolyte salve, the leads to the biofeedback unit wrapped tightly around them. Tones from its speaker pulsed high and frequent. I was working on lowering my defenses, to achieve a state of waking relaxation comparable to the dream state. It was Medwyn's theory that many dreams are actually spillage from one mind into the next, through the vulnerability of sleep. I had to get the tones from the biofeedback unit lower, make them less frequent. Each time the pitch dropped I struggled to feel what I had done, fought to keep it down. Two weeks had passed and the beeps were still discouragingly jazzy.

"Try," wheedled Joe from across the room. He was sending, constantly sending. For fleeting moments I might catch a wave of static, a flurry of color, but that was all.

"Try," he charmed in that little boy's voice of his, but I did not respond for fear of breaking my concentration.

I had been wary at first, but Joe was hard not to like, sweet-natured and friendly. His life had been anything but. Most of his forty-one years had been spent in an institution for the mentally retarded although, strictly speaking, Joe was not retarded. In fact, he was the possessor of a tremendously strong projective mind, as Medwyn called it. While displaying a potentially normal mental capacity, he apparently retained nothing above the level of about age nine. All he learned, felt, saw, he transmitted away, unable or unwilling to hold on to a piece of the world for himself. Through careful training Medwyn had taught Joe to transmit selectively to me, on the visual channel. All I had to do was learn how to receive.

"Are you trying?" I could hear Joe shuffling a deck of playing cards, our experimental subject with their simple patterns and only two colors.

I'm trying, Joe. I deepened my breathing, concentrating, and was rewarded seconds later by a gratifying drop in the pitch of the beeps. Encouraged, I envisioned myself drifting away on a raft of clouds. The tones dropped still lower, the pulsations perceptibly slowed. Medwyn and Joe stopped hurling instructions at me.

Now there was only one place in the universe, one dim point out there across the room. I was no longer consciously aware of the machine or of Medwyn. I was in a waking dream, every sound coalescing to a single tone which I felt rather than heard, emanating from that one throbbing spot, moving toward me as I felt myself moving toward it. Finally, when I no longer had a sense of body or independent mind, the world lit up in a hallucinogenic display of

spades and diamonds, queens and aces. Slightly out of focus, the cards flipped by, skirting across my field of perception. To name them, to speak out loud, I had to dredge up a part of my waking self, blurring the vision further.

"Nine of hearts," I murmured, my voice coming from beneath the sea. "Jack of diamonds . . . eight . . ." But the effort was too much and the cards melted away. The pips from the biofeedback machine brightened, quickening as my exultation kited my pulse and the sweat broke out on my hands. I heard Joe whoop and Medwyn say with great satisfaction: "Progress."

"Those institutions are filled with well-meaning people. But they're understaffed," said Medwyn. Part of my work was to learn about Joe, to understand him as well as he could be understood. "If anyone noticed that he was different, they never managed to pass the information along."

"But you managed to find him. How?"

"By accident. He has a rare blood type and a slight heart murmur. So when he developed appendicitis he was brought here to the medical center because the institution has no intensive care unit. It was a just-in-case measure, uncharacteristically thorough." He chuckled ruefully. Medwyn had very strong feelings about the wholesale institutionalization of what he called the mentally underprivileged. "But Joe pulled through the surgery beautifully."

"But you're a psychiatrist. What did you have to do with . . . ?"

"Nothing," he said, gleefully remembering. "Except that I'm a great advocate of meditation as an aid to relaxation. When I'm on call late at night, if things are slow, I meditate in the staff lounge, which is just across the corridor from the particular recovery room where Joe woke up."

"Terrified!" I could picture it, almost from memory, the sickening ascent from anesthesia.

"Out of his wits and into mine," laughed Medwyn. "Meditation is a state not unlike the one you're learning to use."

"Defenses down," I said, understanding.

"You said it. I almost had a coronary when he started projecting."

That had been three months before my accident. Medwyn had been able to cut through a snare of administrative red tape to have Joe become his patient. Until now he had simply studied his abilities, happy to have gotten him out of the institution.

"But he can be put to use," said Medwyn. "You are proving that. I'm working on getting the funds right now, to search the back

wards for others like him, the ones they can't make any sense of, the defect-reject syndrome. I want to stop the waste of lives—"

"And rebuild broken ones," I finished. "Let's not forget that."

"That's your bitterness coming back to haunt us, David."

These informal conversations were more often turning into impromptu counseling sessions. It made me nervous to confront my feelings. I found it hard to articulate them for all that language was my profession. The worst, unspoken fear was that of starting again, learning to see life from this new vantage point, joined to another human being in a relationship I could not understand. I knew what Joe was, but not who; and even Medwyn could not tell me that. When we were apart, as now while I conferred with Medwyn, I felt my old self, the broken, eyeless man, take hold. The new man with the seeing-eye mind was still beyond my grasp. Out of my frustration to make the situation neat and manageable came paralysis, and from that all my bitterness flowed.

"Here I am," I said, "sipping at the well of the saint. You'd think I'd be a little more grateful." I slammed a fist into my thigh. "Well, I know my cup ought to be running the hell over, but I just can't forget what's happened to me!"

Medwyn listened patiently as always. "Three things, David," he said kindly. "Nobody expects you to forget, it would be asking too much. Gratitude . . . there's time for that."

I heard him and tried to will my fear away as I did on the bio-feedback hookup. "What's the third thing?"

"I'm just a doctor," he said. "Not a saint."

Each day brought sharper vision as the self-induced dream state became waking normal for me. I was taught, using autohypnosis, to isolate a small portion of my mind for reception, and after three weeks of rigid training and discipline my ability to receive Joe's transmissions existed independently from my other mental functions. The small, dreaming corner of my mind became permanently the place where I could see everything Joe saw.

He was in his glory. Joe loved having someone to transmit for and in those first few weeks I saw more than I'd ever seen when I had eyes. Since I could not close Joe's eyes I had to learn to raise my defenses (which proved to be as hard to master as lowering them if I wanted to maintain any control). It was a strain at first, and at times I had to convince him to transmit elsewhere. This meant effectively nowhere since I was the only person around who could receive.

"I can tell," he said petulantly, "when someone's getting me. I don't like it when you hide."

But I had to hide. We roomed together and ate together. About the only thing we did not do together was go to the bathroom, and even when I was locked in there he could reach me.

"Stop!" I would shout, trying to remember that Medwyn must find out just how far Joe *could* project.

"What's the magic word?" he would shout with childish tyranny.

"Abracadabra. I'll break your head for you!"

Silence.

"Please," I would mutter, conquered; and he would relent. But before long the screening process became reflexive. It was like a new muscle I could tense or relax at will.

I most often screened when Joe looked directly at my face, that twisted craterfield between my ears. Before we left the hospital (an event I kept carefully shrouded in the not yet) I was due for some reconstructive surgery. The night before the first procedure Henry Stone came to visit.

"So what do you think?" I said, pointing to my face. "Any hope?"

"You could wear a mask," he grinned, "like the Phantom of the Opera."

"What sensitivity. What tact."

"What's a phantom? What's an opera?" Joe demanded.

"Good luck, Henry. You're on." I left to take a brief, groping walk down the corridor, abandoning Henry to explain about poor old Erik. I smiled to myself. Telling Joe a story was like playing twenty thousand questions. When I returned, Henry, exhausted, seized the opportunity to escape.

"The Phantom hid his face," Joe said when Henry had gone. "Like you used to have the bandages only he had a mask."

Joe seemed to have gotten most of the story. Well, I thought, that's why Henry's the chairman and I'm just a teacher.

"And there was this girl," he went on, "and he told her—he said to her, 'you sing only for me,' even though there were a lot of people . . ."

He sat quietly for a moment. I could sense him reaching as he often did for a connection lurking just beyond his ken. Then I heard the click of breath that meant he had grabbed it.

"You could say that, David." He stared at me, burning my face with his attention. I flinched. "Say it, David."

His eyes moved from my face, panning the room slowly, lighting on ordinary objects—a water glass, a pillow. They filled my mind.

I felt a wave of dislocation, as I often did when he transmitted from a peculiar angle. He lay back now, showing me the sundries of the room which in their sharp, isolate focus seemed somehow threatening.

"Say what, Joe?" I asked, forgetting to screen. It seemed very important to him that he show me these things.

"Say, 'Joe, you see only for me.' "

Tomorrow this would all be gone, his memory of the story projected away. My face would be on its way to repair, no monster I.

"Because I do," he whispered. "Because you let me."

Did I want that? Did he?

I sought the answer in his face. To see Joe's face I had to use a mirror so that he could see it and send it to me: everything through the eyes of the beholder once removed. I held up the mirror now, trying to catch a glimpse of it, expecting to see sorrow, or distress. Instead, I saw his finely chiseled features in repose, a thin curtain of his graying brown hair clouding the image. He stared at the mirror, knowing that it was his face I wanted to see. He saw it for me, reading it with a Zen-like calm of acceptance, the man outside, the child within. It was a good face.

The not yet came. With two glass eyes, a few no longer hideous scars, and Joe at my side, I went home. We went home to the house near the campus that I had once shared with my wife, the roomy house that remembered our plans for children long after we had forgotten to stay married. She had gone off to "find herself" and I stayed behind knocking about the empty rooms thinking that I always had been meant to be alone. The smell of disuse met us at the door. I probably smelled that way myself; high winter was upon us and I would not be teaching again until the fall. That was not to say I would be idle. At long last and without benefit of clergy, I had become a parent.

In the hospital Joe had been fed, dressed, bathed, and occasionally shaved by the nurses. They all loved him and made sad farewells when we left what they had come to see as the nest. Medwyn had tried to prepare me as best he could; but, left to face it on my own, I felt entirely incompetent. But I learned.

Quickly I discovered that the nurses had been overprotective. Joe was happily capable of dressing himself and of bathing. He had a very trim body which made me wonder a little about the maternal instinct Joe seemed to bring out in the hospital staff. He was competent, if sloppy, and he was delighted to give up shaving altogether.

The beard gave him a rakish, erudite look.

His energetic curiosity was trouble from the start. A whole house to explore was more freedom than he had ever before had. In the first week, half of my Depression glass collection succumbed to Joe's investigations.

"Use the sense you were born with!" I shouted after a crash brought me groping into the living room.

"I wasn't born with any," he replied, staring down at the shards which danced in my head. "I'm sorry," he said, looking at me. It was a nasty little trick of his, showing me my full face, letting me see what I looked like when I was angry. It always took the wind out of my sails.

On Medwyn's advice we slept in the same room, but as I became more proficient at finding my way around the house alone, I grew bold enough to require privacy.

"Your own room, Joe," I said cheerfully, letting him lead me to the small sunny garret I had come to think of as the nursery.

He made no response.

"Why don't you get ready for bed?" I prodded. "I'll be going to bed myself, pretty soon."

"In here?"

"No. This is your room."

"I wanna go with you!"

"I'm going to bed," I said firmly. "You can watch television."

"But where will you . . . ?"

I took his arm and showed him that I would be no more than a wall away. "If you want anything you can call me." He pulled away, whining, and started off down the hall. I made a good guess at his position from his view of the carpet, and grabbed him. We struggled back to the nursery.

"Now look, Joe," I said testily. "This is where you sleep. That's your bed and that's your television set." He began to whimper. With one quick, unexpected motion I sat him down on the bed and before he could protest further I had his shoes off. I stumbled back to my room (cursing myself for not moving his clothes earlier) and snatched up what I hoped was a pair of pajamas, returning just in time to sit him down again. I was trying to take his shirt off when, to my surprise, he sighed and rolled over onto his belly.

"Oh, Joe, come on. Put your pajamas on and go to bed."

He lay there moaning with his face buried in the pillow, and a curious thought struck me. Not once during the entire melee had Joe played his trump card and deprived me of sight. Even as I made

my way, hand before me, to my own room I could see the sodden pillowcase. I fell to bed, worn out.

After a bit he calmed down, turning on his television set and transmitting the picture to me. Instead of screening, I watched for a while. He knew I was getting him and that made him feel better. His attention flitted from the television to various details of the unfamiliar room. Finally he drowsed and the picture faded to black. I fell asleep.

I awoke in a strange place. A BAD PLACE. I knew that I must be dreaming but I could not seem to claw my way to consciousness.

I screamed. The scream was echoed. I was tied at the wrists with strips of bedsheet, cringing from . . . *Shortie* . . . the man in the white suit with the leering eyes. All around, staring faces, blank.

It won't hurt, he dribbled, you won't feel a thing.

I cried out for help. None of the others moved. They knew it was useless to resist.

And it *would* hurt. It always *did*.

I sat up shivering in the sweat that ran cold down my sides. I was awake, blind in the dead of night, and the man in the white suit was gone. My screens were up, and through the wall I could hear Joe in agony. "It does hurt, Shortie. Please . . ."

He had sent me his nightmare.

I grappled along the hall, stubbing my toe badly, hardly feeling it. I found him, shook him awake. He sat up tearing breath uncontrollably. I held him, rocking him.

"It's a dream, Joe. Shhh. You're not back there. You're here." He was past convincing. I gentled him as one would a skittish colt, but every time he tried to speak the words were torn from his mouth by a new wave of wracking sobs. Finally I got him to his feet and steered him back to my room, into my bed where he clung to me, trembling, until after an hour or so he fell back into relatively untroubled sleep.

What have I gotten myself into? As sleep finally came the question pursued me, on into my own dreams.

It was Medwyn who got me through the first few crises, patiently tolerating my fits of exasperation. If I snarled that I was tired of being a guinea pig, that my life was no longer my own, that the whole project was absurd, he provided the sane place where I could formulate my own replies to these objections. When I lapsed into nurturing the bitterness I still harbored over losing my sight in the first place, he stood by quietly while I cursed, until I had to admit,

if grudgingly, that I was capable of handling the situation.

Three months had passed; good weather was just around the corner. As he became more secure, Joe had fewer nightmares until they stopped completely. But I was still having a few, now and then.

I sat in the creaky leather chair in Medwyn's office, breathing in the calmativè smells of tobacco, neat's-foot oil, and lemon Pledge. There was sunlight on my face.

"You know," I said, "I keep waiting for things to begin. For my life to . . . come back." Medwyn was silent.

"I mean—Joe lets me see, and that's something . . . no, that's a lot. But it's not everything."

"You want everything," he asked without the question mark.

"I can't forget that Joe is another human being. He's attached to me, like a—thing."

Here I was again, carping for no good reason. Medwyn still made no reply. I could not quite get a hold of what I wanted to say. More to fill the silence than anything else, I ventured:

"Before the accident, I was between relationships. That is, I wasn't dating anyone."

"And now?"

"Well, it doesn't seem possible now." Nothing ordinary, nothing familiar seemed possible anymore. I often felt that the sight I had with Joe was no more than a toy. It worked, true, but was I really expected to teach that way—to live that way?

"Seeing is not enough," I said. "I don't know how to pick up the threads. I can't define my relationships to things."

"Perhaps," said Medwyn, kindly, "you need to define your relationship to Joe before you can . . . pick up the threads."

Of course, he made no suggestion as to how I might do that.

I went after the threads, at first half-heartedly and then with some confidence. As the weeks passed and spring pushed itself up through the snow, small things began to fall into place and big ones looked a little smaller. I started my instruction in Braille. It became important to me that I should be able to read without Joe glued to my elbow. Soon I might take on a few private students for tutoring in my home. The warmer weather filled the world with possibility. And if I assumed that Joe was happy it was because he gave me no reason to doubt it. I found it easier to spend time with him. The whole world was waking up and we both felt the excitement.

We went for long walks now that the cold was gone. For Joe, the world was a box to be opened, and through his eyes I saw things

that had escaped me for thirty-two years. His delighted discoveries were a constant source of pleasure, seeing the animals at the zoo, a revelation. His incessant flow of questions became a happy exercise in illogic rather than a chore to answer. Things I had always taken for granted, even things that had never before interested me, became adventures.

I forgot to resent Joe. I was too busy. If it occurred to me that I had a life that was waiting to be reassembled, there never seemed to be time to worry about it. Instead, there was always something new to show Joe so he could show it to me. Whatever darker feelings lurked below never had a chance to surface.

As a part of what Medwyn called defining the relationship, I found myself more interested in Joe's feelings. Although he could project a spurt of pure emotion on occasion (of the kind that had led Medwyn to discover him), we relied on conversation for the most part. My campaign to open him up, to find the internal life I knew must be there, commenced with missionary fervor. Usually, though, as with those early nightmares, Joe took me by surprise.

"I know I'm a grownup," he said one day. "I'm older than you."

It was the edge of summer and we were strolling through the park which had burst into green. I turned to face him (a die-hard habit from the old days when I had eyes) and caught a look of alarm on my own face that gave me pause.

"Yes," I said carefully, "a good deal older."

He reached up and plucked a twig of red maple, scrutinizing the veins of the leaves, sparing me further traffic with my face.

"I can tell things like that," he said quietly. "How come my inside doesn't grow up?"

We sat down on a bench. Often when Joe was thinking, he gazed off into the distance. He was doing it now and the park, the trees, the children playing, became a painting by Seurat: delicate, indistinct, completely imaged but bled from its borders. The grass shimmered.

"I think I could grow up. Inside, I mean. Do you think I could?"

"I don't know, Joe. Do you want to?"

The park became an abstract study in green, blue, and brown shapes of life, their meanings hidden beneath the flood of running color. Now he sank deeper into thought, his eyes closed, leaving nothing but a bright sunburnt darkness. "Don't know," he mumbled.

He sat silently and I imagined him puzzling it out. For a full ten minutes (and he had never so much as sat still for that long) he wrestled with it.

Joe, grow old, grow wise? But we're the Lost Boys, I thought. We think good thoughts. We fly.

I shook his arm, stirring him out of his reverie. It had turned chilly and we should be heading home.

"I don't think so," said Medwyn. "There are certain neurological pathways that atrophy if they are not used."

I had put the question to him and now I loosed a guilty sigh of relief.

"Still," he continued, "with Joe it's hard to be sure. There is one question I have not been able to answer satisfactorily: does Joe utilize his full brain function before he projects—and, if so, why does he retain so little?—or is the projection a function of some sort of neurological blockade that bounces the data back outward before they're processed? I'm still working on means of determining that."

"You have to find out," I pressed.

"Without making him a prisoner of research," said Medwyn, "the work goes slowly. He's not a chimp, you know."

"But what if he . . . ?"

"Grows up? I don't know. I can't say. But I think that if it hasn't happened by now, it probably won't. And even if it is possible, it's not something we can plan for."

It was no answer. I met Joe downstairs and we went home. He walked beside me unconcerned, seeing our way as he always did. I noticed some new construction downtown, another fast-food restaurant. *Why can't they leave things alone? A great urge to protect him came over me. You wouldn't like the way we do things, Joe. Some things are better left unimproved. Like you.* I almost let myself get away with it. When had he become a part of my life I was afraid to lose? When had he become a thing I would selfishly keep to myself? It was not Joe I really wanted to protect, after all.

Long after that day in the park, when I felt certain he had forgotten the entire conversation, sent it off to the air as he did everything else, a voice I tried not to acknowledge, from a part of me I would rather not have known, kept saying: *He sees only for me.* When two people are united, selfishness can be as strong as love. Even if the love comes later.

The fall semester began and the bond of shared work drew us even closer. Henry Stone had managed to persuade the budget department to scrape up a stipend for Joe as my teaching assistant. I banked the money for him.

My students accepted Joe in the classroom. When their initial

OTHER WELLS, OTHER SAINTS

curiosity had worn off, the routine of having him gaze over their shoulders for me, the sight of him sitting sphinxlike at the head of the class, scanning their faces, became commonplace. As before, wherever he went, he was liked.

As our first year together drew to a close, Christmas shared and snowmen built (two lumps of brilliant coal for eyes), the fact of Joe in my life became irrefutable, his absence impossible. It was a tradition to end the semester with a dish supper to which my students contributed exotic foods. Sampling the spicy morsels, he seemed at home in a world that just a year earlier had been as remote to him as another planet. More than ever, when he laughed I was glad he was laughing. If I had become an unwilling parent, then at last I could say I loved my child.

I was looking forward to the warm weather, the voyages of discovery, the chance to show him once again all the things I was sure he had transmitted away over the past year. But when spring finally came, the first thing that budded was the old fear. The trees were greening and all of nature was waking up. So was Joe.

Late in April Medwyn said, "There is something you should know." His voice was low and compassionate.

I dropped my head, not wanting to hear it.

"Then you know already. I should have guessed that you would."

Joe was growing up. Although he had never again mentioned it, he was answering his own question. The change began so subtly that it seemed not to be happening. Then it took hold, became inarguable. He began to ask questions in class. Not, "Why is the sky blue?" but good, logical questions about the lessons. He would listen to my answers and go back to work, but more and more often that pointillistic gaze would flood my mind and I could tell he was considering something he had learned.

He was becoming restless, hardly able to stay in focus when I needed him to read for me. He wanted to talk. But I did not. He became moody, often sullen.

"I suspect it's a feedback effect," said Medwyn. "In projecting selectively to see for you, Joe has been projecting less. His output is now focused where before it was diffuse. In sending out only what you need he's been retaining more."

I felt like a man under death sentence. Faced with it, I wanted to shout: Why? Can you stop it? Is it operable? Can you treat it?

"We have to help him along, David. His growth must be guided."

I sat rigid, not speaking. What showed in my face, drawn tight and cold?

"David . . . ?"

"No!"

"Be fair, David."

"Sure. Fair. Is it fair that I have to go blind twice? That I have to lose a second pair of eyes?"

"He's not a pair of eyes. He's a person. Joe is only forty-two. I'm sixty-two, for God's sake. That's twenty years. What will you do with your next twenty years? Would you deny that time to Joe? He's already lost twice that."

"He's just going to get hurt," I snapped. "He's going to grow up and learn what a crock this whole stinking deal is. I don't want that to happen to him. Not now . . . when I need him. . . ." My voice trailed off as I heard what I had said. I did not want to lose Joe. It was more than sight, more than the fun of his childish curiosity. It was Joe. He had become my reason for doing things, the force in my life that kept me moving forward. And now he was changing into something new, moving forward himself, leaving me . . . to find his own well of the saint. I had no right to hold him back.

His education commenced. Now his time was divided between his work with me in class and his own work. As his capacity grew, he became more devoted to his studies. I needed to help somehow, but whenever I tried I came up against the stone wall of my bitterness. What Joe needed most was someone to talk with, the opportunity to share his new experiences. I could not do it. There seemed to be nothing I wanted to say that did not make me sound selfish and small-minded. He must have sensed my need for distance because he began avoiding me. In school we were colleagues; at home we behaved as strangers. His life was being filled daily with fresh wonder; mine, I felt, was being drained away.

We went on this way for six months, each afraid to make the break. During the summer recess he had been involved in a program of tutoring and testing with Medwyn, spending much of his time at the medical center. But home was still my house, the only real home Joe had ever known. I wondered if he would miss it when he went off to find his destiny. I never doubted that he would leave when the time came; for the truly curious, the world is too big to stay still in one place for very long.

It was a week before the fall semester was to begin. I walked in the park near the campus, sweeping dried leaves aside with my folding white cane. As I tapped along I suddenly felt Joe's unmistakable presence, a low-level projection just to tell me he was there.

I found him on a bench, reading. I stood there breathing in the air, rich with composted leaves, trying to find the right thing to say. Let it be the end of the armed truce, I thought. Go with love.

"What are you reading?" I asked.

The page flashed into view. It was *Charlotte's Web*.

"No," I protested. "Just tell me." I put up my screens.

"Anyway," he said, "it's a good book."

We walked back to the house arm in arm but I didn't fold my cane. I had to get used to that. Inside, we shed our coats and sat together on the sun porch. "Wanna read with me?" he offered.

What I really wanted was to see his face, but there was no mirror at hand.

"It's about this pig," he urged, "and a very smart spider."

So I sat down and he sent me the page. I picked up the story where I had left it twenty years earlier. "Some pig . . ."

Then the print began to blur. Joe slammed the book shut.

"I'm sorry," he cried. "I just had to do it once I figured out how. I'm sorry, David."

"Joe—" But this could not be stopped. It had been building up in the wake of my selfish neglect. He leaped from the couch, pacing furiously about. I could see the room spinning as he tried to work off the siege of emotion. He was crying freely now, swinging his head back and forth in the ritual denial of grief. I tried to screen, but my own emotions ruined my control and Joe was projecting now for all he was worth—not only the visual, but feelings, nonverbal splashes from the gut.

"Joe! Joe . . ." A tide of vertigo was carrying me off.

"Don't you want to see? Look! All my life I could see. What good did it do me?" In the window I caught a ghostly reflection of him, his face twisted in the grip of turmoil, looking as it must have when he had had his nightmares.

"Until I met you," he sobbed, "I never saw a thing."

He flung himself down beside me and I hugged him, stroking his hair, as he continued to cry, his head pressed to my chest so that all I could see was the dampening checkered pattern of my shirt when he opened his eyes.

"I'm scared, David. I wanted to tell you . . . but—"

"I know," I whispered. "Me too."

"I wish I could stop . . . and stay with you. I wish I could just see nothing—just see only for you."

"You can't, Joe. I wouldn't let you."

Because sometimes love is stronger than selfishness, I told myself.

Even when you don't know it's there.

Welcome to the world, Joe. I hope you'll like it here.

Joe's voice, on tape: "I don't know how I'm working out as a person. You and Dr. Medwyn were all I had to go on for a long time. Now I find that being is a puzzle, and I may never get all the pieces to fit. But I keep trying to get as many as I can."

He had gone to Minnesota to work with a colleague of Medwyn's who specialized in the readjustment problems of erroneously institutionalized adults. He was functioning at high-school level with no limit in sight.

"I wonder a lot about my future," [he went on] "because I would like to be of some use. I try not to think about how old I really am. I'm just beginning. Dr. Reichhelm suggested I think about working with the handicapped. I don't know. . . ."

And I wonder about my future too. Maybe there's another well farther down the road, a smarter saint with stronger magic. The real magic is, in the absence of magic, to live well without it: to see.

THE MALICE OF MACHINES

Be wary of your robot maid,
Watch out for home computers.
Don't trust the mimsy monorail
Designed to help commuters.

Your vidiphone will show you up,
Your copter let you down.
They're in a sly conspiracy
That creeps from town to town.

Your microtapes will tie your hands,
3V will grab your friend.
The laser toilet in your van
Will get you in the end.

—Hope Athearn

THE RETURN OF THE COUSINS OF THE DUNE PREACHER'S MISTRESS

by Simon Labelle

art: Jack Gaughan



Our story so far: A group of Fremen students has taken the staff of the Salusa Secundus embassy on Arrakis as hostages to demand ex-emperor Shaddam IV's expatriation. This time, two of our sympathetic heroes, Duncan Idaho and the Lady Jessica, indulge in more small talk.

The very first step towards power is in thy basement staircase. Clamber up those stairs, or take the elevator. Thou shalt soon reach the Summit, my son, and believe me, what a terrific spot for a picnic. —from the "Commentaries on the Preface of the introduction to the Muad'Dib Owner's Manual" by the Princess Irulan

"WHAT TIME is it, Duncan?" Jessica asked, flabbily sunk in a suspensor chair. She was smoking a *lasegun* spice-joint, while training herself to balance a glowglobe on the tip of her nose, in the Bene Gesserit way. In a corner of the room, a plasteel Tleilaxu turntable was playing her favorite record, Gurney Halleck's greatest hits.

Why is she asking that question now? Idaho thought. He glanced at her. Nothing in her attitude revealed any intention to conceal meaning within meaning within meaning. Or was it intended so? An attitude within an attitude within an attitude? Why would she behave thus, since nobody could hear or see them? Spies? Was that what she wanted him to understand?

"What do you mean?" he said. "Arrakeen time, Tabr or DMT?"

How could he be so simple-minded? *He knows better than that*, she thought. *Or does he?* Why was he putting so much emphasis on time-zones? She had difficulty hiding her impatience.

"Let it be Arrakeen time," she replied, sharply.

"Standard or daylight?" he asked.

She exploded. "Standard time! Standard time! All I want to know is the bloody time in this bloody place, right now! What is it, for Muad'Dib's sake?"

"I—I don't know." The answer had come quickly, almost unconsciously, as a reflex. He frowned. That Bene Gesserit witch had used the Voice upon him!

The implication of those simple words had the effect of a slap in Jessica's face. She stared at him with open astonishment. Why didn't he say that earlier? Was he avoiding the issue or did he simply want her to lose her temper? *A psychic gom jabbar!* Why would he do such a thing? She was slowly regaining her prana-bindu balance; she could feel her heartbeat slow down to normal.

"Where's your Tleilaxu quartz digital watch?" she asked.

So she knows I have one, Idaho thought. His grey metal orbs peered into her spice-addict blue-within-blue eyes. Who could have

told her? Gurney? He would have to investigate the matter. But if she had found out about the watch, why did she lay her cards down and tell him about it at that very moment? Perhaps the move concealed a double-meaning. Gurney. Yes, Gurney was spying on them!

Ironically, he could hear Halleck's own recorded voice from the Ixian stereo speakers. It was flowing through the lovely chords of his electric baliset, as a Coriolis storm on the open bled:

*"She loves thee, yea, yea, yea,
She loves thee, yea, yea, yea,
With a love like that
Thou really should be glad!"*

"Oh," Idaho said, "I lent it to Stilgar yesterday," and he hoped the old Fremen wouldn't lend it to somebody else. *A loan within a loan within a loan*, he thought. "Perhaps Alia would know."

A-ha! Jessica thought, *Stilgar's with him. I wonder what part he plays in the plot.*

"Stil's gone to Tahr, isn't he?" she asked.

"He departed yesterday, my Lady. He wanted to chronometer Shai-Hulud." *Good old man*, he thought. *Always thinking of useful things for the Empire. The Fremen have a saying for that, what is it . . .* "Th'k mab ghanib'd th'k md'b gbdblbl'b dhalik bdbfla." *How clever!* "I could send him a messenger, but it seems to me that his answer, delayed by the journey, wouldn't be precise enough to be of any use to us."

He's trying to teach me something, Jessica thought. "Us!" *He said "for us!" He wants me to believe we're still on the same side!* Or did he mean somebody else? Whom did that *us* include? Conspirators. He couldn't be alone in that plot. Maybe he was just somebody else's useful tool. Then who was the leader of the conspiracy?

"Why did you mention Alia?" she asked.

What was she driving at? What was Alia doing in all this? Maybe Jessica wanted him to follow another track. Why? He stared at her. She was taking the last puff at her spice-joint; then she coughed three times. *The Atreides' three-cough signal!* he thought. That was the secret signal of danger. Danger from whom? Alia? He would investigate.

"Isn't your daughter time-conscious?" he asked.

"Who told you about the pre-born . . . aptitudes?" she replied, and she thought: *You're playing with fire, Duncan.* But she had enough data for now. Alia was the leader. Knowing the conspirators was enough to kill the plot. She glanced at Idaho and asked: "What do you compute, mentat?"

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"Well, the risk of being late gets nothing but greater and greater as time goes by, my Lady. On the other hand, on the basis of the very scarce data that's in my possession, I would calculate a diminishing probability of being early. Therefore, it might be in our own personal interest to make the assumption that it is time to go."

Jessica stood up, saying: "And so shall we do. Let's go. We shall assume dinner's ready."

They left the room together; the curtains rustled as they crossed the doorway. Outside, they could already smell the heavily spiced odors of the evening meal.

Next: Leto and Ghanima discuss who should get to skip rope first. Don't miss that new piece of the Dune saga's interstellar political puzzle: an unparalleled achievement of imagination!

ANSWER TO CRACKER'S PARALLEL WORLD (from page 39)

In our universe Rodin's thinker has his right elbow on his *left* knee.

I am writing this in 1980, a year that has exactly 36 divisors. (We count 1 and the year itself as divisors.) This is surprising, considering that the previous year, 1979, is a prime with no divisors except 1 and itself, and that you must go back as far as 1800 to find an earlier year with as many as 36 divisors.

Can you determine the year of Cracker's parallel-world experiment if I tell you it is the first year later than 1980 with as many as 36 divisors, and that, like 1800 and 1980, it has just 36 divisors?

To find the divisors of a number, first determine its prime factors, then multiply all possible combinations of prime factors to obtain the nonprime divisors. For example, the prime divisors of 1980 are $2 \times 2 \times 3 \times 3 \times 5 \times 11 = 1980$. Thus its divisors form a sequence of 36 numbers beginning with 1, 2, 3, 4, 5, 6, 9, 10, 11, 12, 15, . . . , and ending with 1980.

See page 117 for the answer.

BRIDGES

by Sharon Webb

art: Laura Buscemi



*Mrs. Webb was formerly a nurse,
specializing in cardiac patients.*

I'll tell you why I quit my job. The long immersion in nursing has wrinkled my soul.

I used to be sure about a lot of things. I knew my job; I did it well. But then, I had to ask if what we do is moral. Is it moral to listen to an old lady pray for death for seven hours, and then in the eighth to hang a bag of blood to sustain the dying for another day—or two—or three? Was it right to apply metal paddles to a cancer patient's chest and shock him back to something less than life? Was it just and human to do what we did to Clara Martin? I don't know. But she was one of a long line of patients that I brought home with me. They tossed and turned in my brain at night, pushing out sleep, asking me over and over again, "Why?"

I heard this at report: "Room 212. Clara Martin, 73 yo white female, patient of Dr. Leonard Levine, came in on the seventh. Admitting diagnosis of CVA. Pronounced hemiplegia. Aphasia. Turned and positioned q. 2 hours. Incontinent of urine times two. Sixteen-gauge Foley catheter inserted with eight-hundred plus cc's clear urine out this eight hours. Fed times two. Diet taken poorly. Condition stable. She's all right. No trouble."

Translated, it meant this: Clara Martin had a stroke. She's paralyzed. She can't speak. We put a tube in her bladder so you won't have to change her bed. She's not going to die today. She won't give you any trouble.

She was tiny. When I walked into her room, she caught every move I made with a pair of bright blue eyes. They were too bright. The look in them was fear.

I walked up to her bed and touched her shoulder. Through the crisp green print hospital gown I could feel sharp bones under my fingers. "Hello, Mrs. Martin. I'm Sharon. I'm going to take care of you today." She had a single flower on the bedside table. A white carnation which the florist had tinted an ugly blue. I turned it so that she could see it better, but she never took her eyes from my face.

It seemed to me that she was asking a hundred silent questions at once . . . : What's going to happen? . . . Are you going to hurt me? . . . What's going to become of me? . . . Oh, what? . . .

It's easy to ignore. It's tempting. Oh, how tempting it is. Walk into the room, take care of the obvious bodily needs, walk out. After all, she can't talk. She can't *tell* you what's bothering her. Chances are she'll never improve, so do your job and leave. *Walk out.*

But, somehow I couldn't.

I asked her to try to talk, but she wouldn't. There was nothing wrong with her voice, of course. It was her brain that was short-circuited. But if we could get beyond that block, everything that Clara Martin knew and thought was still inside. "Please try, Clara."

She stared at me then with all the concentration she could muster. Her throat muscles tensed. Then she looked away as if she were embarrassed. I thought I knew why. I think she had tried to speak when no one was around. And when she heard her voice she was ashamed.

She let me hear her one time that day. Her voice was an unintelligible garble, as if it came from a faraway drowned place. It seemed to shock her. After that, she closed her eyes and shut herself away from me.

I went home that night and tried to sleep. When that didn't work, I switched the light back on and thumbed through medical and nursing books and journals. Intellectualize and dull the emotional impact, you see. But, there was one article I found that wouldn't let me sleep until the night faded into shades of gray. It was about singing.

When I went into her room that afternoon, I shut the heavy door so that no one passing in the hall would hear. She was sleeping; but as I crossed the room on squishy rubber soles, she woke and impaled me with her eyes. I made small talk while I checked her thready pulse and wrapped a black blood-pressure cuff around the soft flesh of her arm. It was a necessary preamble. I talked to her and brushed her hair and gave her sips of water until I could see that she had relaxed a little. Some of the apprehension left her eyes. Then I said, "I'm going to ask you to do something. It's going to sound silly, but I want you to try. Will you?"

She looked at me steadily. I thought I saw a glimmer of puzzlement creep into her eyes. "Clara, I want you to try to sing." She closed her eyes as if she'd heard an ironic joke.

"Listen to me, Clara. It's a way for you to communicate. Singing comes from a different part of the brain than speech. You must have heard people who stutter. They don't stutter at all when they sing."

She looked at me and the non-paralyzed side of her mouth quirked up in a lop-sided smile. "I told you it sounded silly, but I want you to try. It may work. Please?"

She smiled again as if to say, "You want me to sing? I couldn't do that when I was well."

"Neither one of us is going to try out for the Met, Clara. That part doesn't matter. I want you to try to sing now." I searched for a familiar song, " 'Happy Birthday.' "

She looked away, but I caught her hand and held it. "I'll go first. Happy birth-day to you-u-u."

I suppose it was ludicrous. Clara thought so. She sprang that charming lopsided grin on me again. "Now, let's try it together. Happy birth-day to you-u-u."

I don't know what I expected. I guess I really didn't believe completely that it would work, but suddenly Clara was singing in that little room. She sang in a clear soprano. And the words were as plain as yours or mine.

I felt myself grinning. Widely. Foolishly. "Now, try this," and I sang to the tune of "Happy Birthday," "I want-a drink-of wa-ter."

She sang it back to me. I stood there like an idiot for a moment

and then I scooped up her water glass and put the straw to her lips. But it was a new pathway, I thought. It could have been rote. Maybe the words didn't really mean anything to her. But deep-down, I felt that they did. Maybe because I so much wanted them to.

We drilled off and on all afternoon, substituting another phrase for "Happy birthday to you." She needed a lot of prompting, and she had to start over when she was interrupted in the middle of a phrase. It was as if she had to get back on the track at the beginning the way a door-to-door salesman does sometimes when he gives his memorized pitch without thinking. "But, that's all right, Clara. You're building a bridge from your left brain to your right."

When Dr. Levine came in to make rounds, I was elated. I dragged him to Clara's room promising a surprise; but with him there, she seemed stricken with sudden shyness. She wouldn't make a sound.

Dr. Levine patted her on the arm and left the room. I followed after. "She *did* communicate. I know she did."

He didn't seem interested. "I suppose it appeared like that to you, but I don't think it was anything more than parroting. She wanted to please you. That seemed the way to do it."

By the time I got back to the nurses' station, Dr. Levine had been waylaid again, this time by Sister Bridgett, a copper-haired renegade nun who had broken away from her order and started her own visiting nurse service. The little nun stood with one hand on her hip; the other clutched a chart. "You can't let Mr. Meade go home without follow-up, Doctor."

Levine muttered and shook his head. He glanced at his watch and started to turn away. Agilely, she blocked his way. Her movement sent the heavy gold cross around her neck in motion. It swayed back and forth like a pendulum.

Watching it all, Adele, the other RN, giggled. "Tilting at windmills again."

Sister Bridgett thrust the chart and a pen at Dr. Levine. "We'll need your written order."

When Levine shrugged, took the pen, and began to write, Sister Bridgett displayed an altogether charming chip-toothed grin.

"Windmill concedes," I said. And I was thinking, there's something to be said for persistence.

I didn't give up on Clara. Over the next few days, I tried to get her to sing her needs to me. She never tried when Dr. Levine was in the room, and I never asked her to again. She *did* try with a few of the other nurses and one of the aides, a tall ebony girl named Lou, who worked first shift. But it wasn't enough. Clara was limited

to a few phrases. She couldn't originate any of her own. She would look at me and sing, "I want-a drink-of wa-ter," but it was as if she were trying to put dozens of meanings to the words. Meanings that none of us could understand. Often she'd stab at the air with her good hand, and work her mouth, searching for words that wouldn't come, until she'd give in to tears of frustration. Then she stopped singing altogether.

On the fourth day when I listened to report, I asked the relief charge nurse if Clara had sung to her. She looked at me blankly. When I tried to explain, she cut me short. "I don't know anything about that. I'm not a speech therapist." She didn't add, "—and neither are you." She didn't have to. But after report, Lou caught up with me in the hall as I walked to Clara's room. She seemed to want to tell me something. "What's up, Lou?"

She stared at the gray-green wall for a moment before she leveled her eyes at me. "That lady be singing today," she said, "but she be singing a new song." Somehow Lou had turned that simple phrase into something vaguely ominous.

"What is it? What's she singing?" But Lou had turned away and was walking swiftly down the hall.

I hesitated before I tapped at Clara Martin's door. I don't know why. I waited outside her door checking my watch, studying my scribbled notes from report for nearly a minute before I went into her room.

Clara was propped on her side. She stared at the window where a gray glaze of rain crept down the glass obscuring the single row of bushes at the edge of the parking lot. I started to say, "Good afternoon," realized that that was ridiculous, and changed it to a muttered comment about the nasty weather. She didn't respond.

The blue-tinted carnation was limp and the edges of the petals were shriveled. I threw it away and started to set the little empty vase out of sight behind a stack of linen. I almost dropped it. Behind me, I heard Clara's soft clear soprano, but it changed almost at once into something I find very difficult to describe. It was a high-pitched keening cry without words. But "cry" isn't the right word; "cry" denotes misery or fright. This was something else. There was a sharp edge of triumph in her voice. And somehow, it was chilling.

The cry wasn't loud. It carried through the room easily, though. It seemed meant for someone—or something—very close. "Clara," I touched her shoulder. "Clara?"

The cry stopped but she didn't look at me. She stared at the window, but she seemed to be seeing something else—something

very far away. And she was smiling that lopsided smile.

Her pupils were constricted as if a bright light shone in them. I wrapped the blood-pressure cuff around her arm—160/90—usual for Clara. Her pulse was a little fast, but not alarmingly so. She seemed to be in a reverie so intense that I couldn't catch her attention.

Then she began to sing again. It was as if she sang to a sleeping part of my brain. For a flashing moment, I felt aware of a hot sun overhead. A shadow slid over me and I cringed. Sharp talons reached for the nape of my neck.

The feeling was gone as quickly as it came. I felt a little foolish at my quivery attack of nerves. Clara was watching me and smiling. "I want-a drink-of wa-ter."

I felt an intense relief. But later that day as the unrelenting gray rain slid down her window, it happened again. This time as she keened her song and stared at emptiness, I felt a momentary fierce joy. A warm wind blew against my body.

It was over in a second. When I looked down, I saw that my hands had curled into claws.

That night, I brought out my books again, and tried to make sense of what was happening. I read my neurology nursing texts. When they failed to shed any light, I brought out Blakemore and Restak, Sagan, Penfield, three or four others. Dr. Wilder Penfield spoke of a mind, separate from the brain, searching for a proper word when the brain's speech cortex was electrically interrupted. The patient was conscious and was shown a picture of a butterfly, but with the inhibiting electrode, he couldn't speak. Then the electrode was taken away. " 'Now I can talk,' he said. 'Butterfly. I couldn't get that word "butterfly," so I tried to get the word "moth!" ' "

It made me wonder if something searched within Clara's brain for words and ways to say them. I laid the Penfield aside and picked up Sagan, but I couldn't concentrate. It was very late and I felt myself dragged into sleep.

At the edge of unconsciousness, I heard the wild keening cry again . . . *I folded leather wings and tore at flesh.* . . .

"She gives me the creeps," said the relief charge nurse during report. "I think she's had a psychotic break. I don't envy her family."

The only family Clara had was a middle-aged niece with an ailing husband. When I went into Clara's room, the niece was there. She perched on the edge of a chair and stared at the bed. As she watched, she twisted and shredded a tissue. Her nails were bitten to the quick. "She's stopped now," she said to me. "If she hadn't stopped that awful

noise, I'd have jumped out of my skin."

Clara lay smiling, staring at the smooth blank ceiling.

The niece stood up, dropping the tissue shreds on the floor, wiping damp hands against her skirt. "The doctor says he can't help her anymore. He wants me to take her home." She reached into a cluttered purse and drew out a pack of gum. The silver wrapper glittered in her hand as she crinkled it, rolling it into a shiny ball between her fingers. "I have trouble with my nerves. I can't do it. I don't—I can't take her home." The woman began to cry. She chewed her gum and cried and Clara began to sing again. "Oh God," the woman said and ran out of the room.

The restless searching in Clara's brain had started again. I could imagine it seeking out remote reaches of itself. Spanning. Crossing. Making new pathways. Trying desperately to reach beyond dead cortex and end the terrible isolation.

She sang and I listened. I listened to the sweet hypnotic keening, and I felt stirrings in myself as if her song forged a path into my brain through all its layers.

It penetrated the rational cortex and spread itself into the more primitive limbic system. It sent coiling tendrils into the tiny primeval remnant, the reptilian brain, that nestles at the core of all of us.

Cellular impulses shivered with her song, and stirred, remembering . . . The yellow sun beats down. Eggs erupt from my body and fill the shallow nest in the warm earth. I cover them with sand scratched from the pile and smooth it with the sharp edges of my beak. I scurry against the wind, pumping air into my stretched wings. I rise and fly on the warm air. I fly. . . .

I rose against the impulses in my brain to a more rational part, a part which gave the illusion of control. Clara lay silent on the bed, looking at something very far away.

I had to get out of the room for awhile and sort out my head. I left Clara and went to the nurses' station and told Adele that I was going to supper.

I wasn't hungry. I poured a cup of coffee and took it to the little nurses' lounge. In the hall, Clara's niece had cornered Dr. Levine. Her mouth worked; her fingers clutched his sleeve.

I turned off the overhead light in the lounge and sat in the dark with only a single shaft of light from the open bathroom door. I tried to blank out my mind and think of nothing but the taste of the hot black coffee in my mouth, but the questing thing in Clara's brain wouldn't let me. To want to communicate that much— To search

so desperately for a way— As if to fail would be to die. With that kind of need, was there a way?

I didn't think it was telepathy. It was something else. The questing thing in Clara's brain wandered in an ancient vestige, a part so primitive that it lacked speech. Somehow it had spanned the chasm into mine, but the memories, the images I felt weren't Clara's. They were the echoes of my own.

And in some way, I had forged a separate link to Clara. When my memories played the ghost of themselves in my brain, I think she knew it—knew that she at last communicated. Knew, not in her conscious mind, her cerebrum, but underneath, in the limbic system of the tripartite brain where vivid emotions play their electrical dramas—where empathy begins.

It was as if we crossed on zig-zag bridges, never quite meeting, passing each other in the dark on not-quite parallel passageways.

But, they were there, those bridges. With time there could be others. With time we might stand opposite each other and see the way across.

I sat in the dark until my time was up. Then I went back to the nurses' station. Adele was on the phone. She wagged her hand in the air to get my attention. She said "goodbye," hung up, then said, "Levine wrote orders for Clara Martin. I gave her the meds. Her niece raised Cain and said she wouldn't take her home. Absolutely refused. So Levine called around and found a nursing home that would take her. I just talked with them. We'll be transferring her in about an hour."

I picked up her chart and looked at Dr. Levine's notes. He had ordered her sedated with large doses of psychotropic drugs that act on the limbic system.

I didn't go into her room right away. I left it to Adele to tell Clara that she was going to a nursing home. I didn't go into her room again until the two ambulance attendants came with their stretcher.

She was very small and very quiet. She made no sound as we lifted her onto the stretcher. I touched her hand and her fingers curled around mine. She looked at me with eyes bright blue and wild once again. I said, "Goodbye, Clara," and as I watched, her eyes dulled and closed me out.

I placed her little bag of belongings on the stretcher—nothing much, a few old nightgowns and an empty vase, and then I watched as they wheeled her away.

And as I watched, I felt that we had killed her. I felt ashamed.

That night, the stars were cold against the sky. As I drove home,

I wrote two letters in my mind. One was a letter of resignation; the other a letter of application to a feisty little nun, Sister Bridgett, with hands on hips, who had one motto, "If it works—"

It might be too late for Clara. I didn't know. But there would be others locked in solitary prisons who fought against the dead cells of themselves—others, who reached out. I didn't know if Sister Bridgett believed in evolution, or reptilian brains or any of the rest. I didn't think it mattered. Her belief, perhaps her greatest, was in human dignity. And so, I thought in wonder, so was mine.

And that night as the edge of sleep finally came, a hot sun burned into my brain—reflected from a pair of bright blue eyes. And streams of air pressed warm against my body as I skimmed in lazy arcs above the giant green ferns.

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CLOSER ENCOUNTER

by Mack Reynolds

art: James Deane



In a somewhat irritated typeface, Mr. Reynolds assures that this certainly is not his first sale—that was back in 1949, to Planet Stories, and the magazine ceased publication before the story was printed. He sold 46 SF stories in his first two years of writing. He's been working in book lengths of late, and has some 50 or 60 of these in print, in 15 languages.

Bunny Blair had not only a woman's but also a reporter's intuition. She could smell a story when she saw one was the way she put it. And when she smelled one her whole body took on a bounce, which was where her nickname came from. That and the fact that her somewhat pinkish nose would give an involuntary twitch.

The other had emerged from the Public Library immediately before her. Bunny was still stuffing the notes she had been taking into her bag when she spotted him. He seemed to be about average in height and build; and ordinarily she wouldn't have bothered to look at him twice, Bunny being New York born.

However, what gave her her twinge was the fact that there was no lettering on his outfit. There should have been some kind of lettering, or he should have been carrying a sign.

She stepped up and said briskly, "I'm Bunny Blair. Possibly you've seen my by-line from time to time. I'm a reporter. Do you mind telling me what show you're advertising?"

"I beg your pardon?" The voice came out slightly mechanical in timbre.

"The spacesuit, the spacesuit," she said impatiently. "What show are you advertising?"

He took her in for a long moment. There wasn't too much of Bunny Blair to take in. She went possibly ninety-eight pounds. She was a bit wide of eye, as though continually startled. Her hair was cut ultra-short so that she could run a hand through it without disturbing the coiffure. And, as mentioned, she had a small pinkish nose. Some would have named her cute. But not her fellow journalists. They branded her one tough little bitch.

He said finally, "It's not a spacesuit. It's an Earthsuit."

"It looks like a spacesuit to me," she said definitely. "I used to be a Trekkie. What's an Earthsuit?"

"It's a suit that enables you to live on this fantastic planet. The atmosphere, the gravity, everything . . ."

"Oh, come off it. A little green man from Mars, eh? Come on, on the face of it, anybody who'd do himself up like you is obviously an exhibitionist. You want attention. Okay, maybe I'll do a short item on you. What's your name?"

"Zap."

"Zap what?"

"Just Zap. On our planet, we don't need second names. When a new, uh, child comes into the world the computers select a name. There are thirty characters in our written language. They select a name combining two to ten letters, making sure that the same name

isn't duplicated."

The diminutive, aggressive newshen said, "Damn it, you almost sound lucid. I wish I could see your face through that one-way green glass you've got in that silly-looking helmet. What do they call it, Polaroid glass, or something?"

"I'm afraid I wouldn't know. I'm a student of intersidereal anthropology, not a designer of Earthsuits."

"A student? Where in the devil are you studying?"

"I'm an exchange student, about to assume my studies at the University of Lhasa."

"Lhasa! Then what in the devil are you doing in New York?"

"The term hasn't begun as yet. I've been spending most of my time here in the library, brushing up on my knowledge of matters terrestrial. Also, it has been necessary to cultivate the Tibeto-Burman language before I enter Tibet, to facilitate my studies. For some reason, there seem to be few, if any, radio emanations from that area of your planet."

Just for the hell of it, Bunny went along with this weirdo. "Radio emanations, eh? So that's where you learned English, eh?"

"Yes, of course. Unfortunately, we've been receiving your broadcasts for some time now."

"So you're sticking to your story, eh? A BEM."

"I beg your pardon?"

"Never mind. Listen, I'll spring for a drink. There's a bar just across the street."

"I don't drink. You'd be astonished what alcohol would do to my metabolism."

Bunny Blair looked at him skeptically. "You sound like a kook who's been on the sauce for years. Okay, I'll call the bluff. My apartment's within walking distance. I'll want to tape some of this."

As they proceeded down the street, Bunny said, "Now then, this, uh, other world you're from, what's its name?"

"Minos."

She looked up at his helmet from the side of her eyes and said sarcastically, "I've got you now. There is no such planet."

"Not in this solar system. Minos is in the Dys Topia system."

He hesitated and then said, "I hope that I am not boring you. You see, I have had very little opportunity to talk with any of you humans. Most take one look at my Earthsuit and assume that I am . . . ah, is the expression, a nut?"

"Yes," Bunny told him. "How far is this Dys Topia?"

"Approximately eighteen light years."

"Oh ho, it is, eh? How did you get here to Earth?"

"I don't know."

She looked at him. "What do you mean, you don't know? Did you just sweat it out in your flying saucer or were you put into hibernation? Don't tell me that you people have faster than light—"

"I don't know how I got here. I'm a student of interstellar anthropology, not a space technician."

She took a new tack. "All right, damn it. Now you said that you were here on an exchange student deal with the University of Lhasa. How did your people make the arrangements for the exchange?"

"I wouldn't know the details. I'm an anthropologist, not a mystic."

She shook her head and decided not to explore that.

"Here's the apartment," she told him and preceded him through the door and led the way to the elevator.

As they were going up, Bunny said briskly, "No funny stuff. I'm bringing you here so I can get my tape recorder. I'm small but I know karate. So don't get any ideas about sex."

"Sex?" he said.

"Sex," she said.

"Oh, yes. I was reading about it in the library. Fascinating."

"Isn't it though?" Bunny said, twisting her mouth sardonically. "However, no funny stuff."

"You don't have to worry. We don't have sex on Minoa."

Bunny closed her eyes in pain at that one and held her peace until they had entered her small apartment. She quickly scooped up a brassiere and a wrinkled pink slip from the couch, caught up several sections of the Sunday edition on the *Times* from where they were strewn around and hurried them into the bedroom.

She returned bearing a tape recorder, set it deliberately on the room's center table, activated it expertly and then turned back to Zap.

"Have a seat," she said, indicating. "There, on the couch. Now then, what was all that about there being no sex on Minos?"

"Why, on this world you vertebrates have two sexes and both must be involved to give birth to one or more of your young. However, even here there are some lower life forms which have only one sex and reproduce by simply dividing. You also have some life forms, such as ants and bees, that have more than two sexes."

"All right, okay, so on Minos you simply divide. Everybody is the same sex. But it's one thing for something like a worm, or whatever, to divide and another for something as big and complicated as you."

"Not at all," he told her. "Periodically, we grow a projection on

our bodies. When it has reached a certain size, we pull it off and it becomes a small Minosian."

She was staring, fascinated. "And then you become its mother, or father, or whatever you call it, and raise it?"

"No. It takes care of itself from the beginning."

"Then you have no parental feeling for the kids at all?"

"None. In your idiom, they can go to Hell in their own way."

She frowned puzzlement and said, "Well, then why go to the trouble and, I assume, pain, of jerking this piece of yourself off?"

"There is no pain. In fact, it gives us a very definite sensual pleasure."

"You mean . . . ?"

"Indeed, a very definite and intense pleasure."

Bunny muttered, "As Benjamin Franklin or somebody once said, masturbation is its own reward." She got back to it, saying, "Then, what it amounts to, your whole race consists of twins. Clones. That doesn't make sense. There'd be no evolution."

"Oh, no. When we divide, the new Minosian isn't an exact twin. There is always what you might call a small mutation."

She frowned at him. "How could that be?"

"How would I know? I'm an intersidereal anthropologist, not a biologist." He said that very reasonably.

The diminutive reporter rolled her eyes upward, as though in appeal to higher powers, but then returned to the fray. "Now, this bit about the child being able to take care of itself from the beginning. Surely, some full grown adult would have to help it get food and so forth."

"We don't eat on Minos."

She looked at him for a long empty moment before saying, "You must get awfully hungry."

"Not at all," he told her. "You see, our atmosphere differs considerably from your own. We get our energy by oxidizing hydrogen and ammonia to water with atmospheric oxygen. Our minerals we get from water, much as do your Earthly plants."

"No sex, no food. Listen, Zap, what do you get your jollies from? You know, what do you consider fun?"

"We are all students of one sort or another."

Bunny ran a desperate hand through her short cropped hair. "You know," she told him. "If I don't watch myself, I'm going to start believing you. Sometimes you almost make sense. If my first article pans out, maybe I'll do more than one. Where are you staying?"

"Staying?"

"Sure. Where do you sleep?"

"Oh. We Minoans don't sleep. I spend the night in the park meditating until the library opens in the morning."

"Spend the night in the park?" she said. "But aren't you afraid of muggers?"

"Muggers? Oh, more of your extensive idiom. Well, no. In fact, I sometimes suspect they are fearful of me. Usually, they take one look and, ah, fade. Possibly they think I have a laser pistol, or a phaser, or something."

"Do you?"

"I don't even know what one is, except for seeing them in your science fiction productions."

Bunny forced herself to think for a moment. This wasn't going like most interviews.

She came up finally with, "What is it that you've been studying in the library, that is, besides the Tibetan language?"

"Why, this morning I read Plato and . . ."

"What of Plato's?"

"All of Plato. Then Shakespeare's plays and several of the books of the historian Erich von Däniken . . ."

"Historian?" she said.

"Why, yes. The celebrated Earth historian."

"Shades of Phil Klass and Martin Gardener," she muttered. "But go on."

"*Das Kapital*, *War and Peace* and the limericks of Isaac Asimov. Frankly, I couldn't understand the last."

"But everything else went down, hey?"

"Yes."

She sneered. "Listen, there's nobody going, from Minos or anywhere else, that could even turn that many pages in one morning."

"Oh, I didn't have to turn all of the pages, you know."

She looked at the reflective face plate of his helmet in bitterness.

He said hurriedly, as though to reassure her, "You see, we Minoans have no senses of smell, taste, or hearing. To the extent I need them on this weird planet, they are built into my Earthsuit. However, we have other senses. And our intuitive sense is developed more extensively than your own."

"Intuitive sense."

"Yes, intuition. Undoubtedly, you know how it works. Say that you have a problem involving ten unknown elements. You begin seeking them out, one by one. When you arrive at, say, element seven or eight, suddenly the answer comes to you. Intuition is at

work. Well, in our case, we could need only two or three of the unknowns before the problem could be solved."

The fiesty little reporter said, "What in the devil's that got to do with speed reading?"

"Let us say that you are reading one of your mystery stories. When you get possibly halfway through many times you intuitively guess who the murderer is. Very well, I would possibly need read only the first chapter."

She tried to assimilate that, grimaced and then said, "Still, what has that got to do with speed reading a few million words of our classics in a matter of hours?"

"The book doesn't have to be a mystery, you know."

She gaped at him this time. "You mean . . . ?"

"Yes," he said. "Allow me any book on any subject. I'll read the first chapter or so and then realize the contents of the rest of the volume and, hence, not have to continue. On Minos, we seldom publish more than the first few chapters of a book. The readers do not need more. It saves a lot of what you call paper."

Bunny came to her feet weakly. "Listen," she told him. "Maybe you don't drink, but I do."

She made her way over to a sideboard upon which stood four or five bottles and a dozen glasses. She took up a bottle and shakily poured three fingers. She knocked it back, picked up the bottle, and returned with it to her chair. Most of the Bunny Blair bounce had gone out of her, and her wide-eyed look had been displaced by a dazed one.

She poured herself another dollop before saying, "All right, now. You said you have no sense of hearing but you have other senses we don't know about. How do you communicate if you have no hearing? You mean you have ESP?"

Zap shook his head. "Certainly not. There is no such thing. If there is perception of any type, there is a sense."

"But then . . ."

"It's just that we have *more* senses than you have."

"Well, how do they work?"

"How would I know? I'm an—"

"I know, I know," she sighed. "You're an anthropologist, not a parapsychologist, or something. Look, how about religion on Minos? Do you believe in a god, or gods?"

"Oh yes, the gods. They worship us. I suppose you would compare them to doting parents on this planet with their, most usually, spoiled children. The gods just love us to distraction. Very boring."

Bunny said, her voice strange, "They worship you, eh? Look, on Earth there's a big controversy about god, or gods. Some people don't believe in them at all. Now these gods of yours. How do you explain them? Where did they come from and so forth?"

He said plaintively, "I've never tried to explain them. I'm an anthropologist, not a theologian."

"I should have seen that coming," she said sadly. "Now just a minute. What else?" She finished her second drink. "Oh, yeah. How about wars on Minos? Do you have much fighting among yourselves?"

"Wars? Ah, yes. A very strange institution. I read the *Encyclopedia Britannica* yesterday. A great deal of it was devoted to the subject. I am amazed that your species did not become extinct centuries ago."

"No wars, hey? How did you eliminate them?"

"We've never had any reason to fight one."

"How do you mean?"

"We've simply never had anything to fight about: food, land to grow food upon, herds of animals, hunting grounds, not even women. Wars are usually fought over property and we don't have any."

Her usually wide eyes narrowed slightly. She said, "Oh? All government owned, eh?"

"We don't have government. Governments evolve to regulate property; and, as I just told you, we don't have any."

"Now look," she got out. "You've got to have *some* property."

"Why?"

"Damn it, there are some things, like your personal toothbrush, that can't be community property."

"We don't have any teeth," Zap told her reasonably.

She was breathing more deeply now, in frustration. "Now, see here," she said. "No sex, no food, no sleep, no senses of smell, taste, nor hearing, no government, no property. What in the hell do you Minosians look like? Are you—what the hell's the term?—humanoid?" She poured herself another shot, figuring she needed it.

"No, no," the other said. "Of course not. In the library I read some of your science fiction books. Many of them suggest that elsewhere in the galaxy evolution would duplicate that on Earth, finally to the point of producing vertebrates."

"But it doesn't happen?" She was having second thoughts about this article.

"No," he told her definitely. "Vertebrates are unique indeed. Take for one example the manner in which you breathe your air. It comes

in through your mouth or nose and must share the passage with the ingesting of food. The mouth is also the most powerful weapon of many of you vertebrates and often the most deft organ of manipulation. It is also used for expressing feelings through scowls, sneers, smiles. It is an organ combining ingestion, breathing, chewing, tasting, biting, fighting, yelling, whistling, grimacing, murmuring love preliminaries, helping to thread a needle, and oral intercourse."

Bunny said indignantly, "On that last, I must ask you to watch your language, Mr. Zap."

"Oral intercourse?" Zap said, a shade of bewilderment there. "Communicating by use of the mouth. In short, talking. I was merely illustrating why it is unlikely that such a strangely constructed life form would be duplicated elsewhere in the Galaxy."

Bunny Blair's eyes closed in sorrow. She came to a sudden decision, knocked back the last drink she had poured, and wobbled to her feet.

"Look," she said. "The hell with it. If you had a hat, I'd hand it to you. Would you mind getting out?"

He stood hesitantly. "But I thought that you were going to do an article about me. It would facilitate my meeting people and expedite my studying. I thought that you would tell your fellow humans all about me and Minos."

"Who'd believe it? Any of it?" Bunny Blair said bitterly, flicking her tape recorder to erase. "I'm a reporter, not a magician."

SECOND ANSWER TO CRACKER'S PARALLEL WORLD

(from page 99)

After 1980 the first year with 36 divisors is 2016, which, by a pleasant coincidence, is just 36 years later!

Now for a much harder problem. What will be the first year that has the largest possible number of divisors for any year of no more than four digits? See page 164 for the answer.

IMPROBABLE BESTIARY: The Beast in the Loch

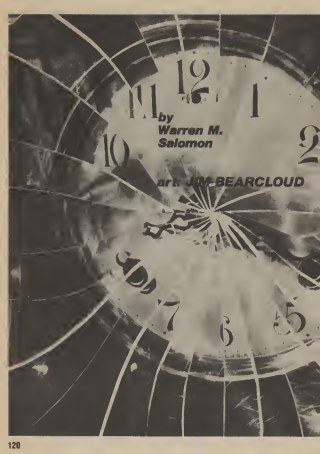
Softly and silently, secret and swift,
Deep in the loch . . .
Down to the sea . . .
Down where the dark dreams of centuries drift
I am the child of the sea.
Long before Caesar came marching through Gaul,
Long before Hadrian built his great wall,
I was here waiting and witnessed them all:
I am the serpent who swims to the sea . . .

Swiftly and secretly, safe and secure,
Deep in the loch . . .
Mystical loch . . .
Down where the water is crystal and pure
I am the child of the sea.
Here Saint Columba knelt down and he prayed,
Here knights of Cromwell prepared for the raid,
I came before them, and here I have stayed:
I am the serpent who swims to the sea . . .

Scientists come, with a diving machine . . .
Let them come! Let them camp on the banks of my shore!
Curious onlookers, eager and keen . . .
Let them come, as their ancestors came here before!
Hydrophone crews in a steel submarine,
Sonar and radar for *Time* magazine,
Let them come if they can!
Let them seek the unseen!
While deep in the depths I lie safe and serene,
I am the child of the sea.

Softly and silently, secret and swift,
Deep in the loch . . .
Ancient grey loch . . .
Life everlasting: a curse, or a gift?
I am as old as the sea.
Timeless, I drift while the centuries creep.
Men live and die, laugh and cry, love and weep.
I am unchanging, alone in the deep.
I am the serpent, and cry in my sleep . . .
—F. Gwynplaine MacIntyre





12
11
1

by
**Warren M.
Salomon**

art: **JIM BEARCLOUD**

A black and white photograph of a clock face, partially obscured by a spider web in the foreground. The clock face shows numbers 1 through 12, with the hands pointing to approximately 10:10. The spider web is composed of several concentric circles and radial lines, some of which are thick and prominent. The background is dark, and the overall mood is mysterious and somewhat unsettling.

TIME & PUNISHMENT

Mr. Salomon, 39, is a lawyer whose occasionally conflicting interests include the pursuit of money, women, science fiction, and libertarianism. The plot for this story (his first sale) was conceived whilst jogging.

ONE

I had kept up the payments on my time machine; but I was three months behind in the rent, a month overdue for a haircut; and my shoes were in such bad shape I was afraid they'd wear out if I went walking down the street. So I sat in my office, hoping a client would somehow appear. One did.

I could see through the frosted glass of my office door that it was a dame who knocked. Not hesitantly like most of them, but firmly. Right away I was interested. I liked her silhouette, too.

I could also see the time-worn lettering on the glass she was reading. It was backwards to me but I knew what my own door said. BEN HARDY. TEMPORAL INVESTIGATOR. Yeah, that's me.

She was smartly dressed, shook my hand briskly, and went right to the seat where I had the best view of her knees peeking out of her expensive skirt. Nice. One shapely leg crossed over the other, leaving a foot bobbing ever so slightly in the air. Delicate ankle, expensive shoes. She was about twenty-five, a real looker.

Usually they start out nervous, wondering if I'll think they're crazy. Most of them are. You get used to it in my business. But this doll was different.

"My name is Patricia Wadsworth, Mr. Hardy," she began. "Perhaps you've heard of me."

Wadsworth. Yeah, who hadn't? Her old man had been one of the richest guys in the world and she was his only child. He had been a widower until just before he died, then he flipped out and married his nurse, changed his will leaving everything to the new dish, and cut his daughter out completely. It had been in all the papers. The daughter had contested the will and lost out to Nursie. And now she had come to me. I wasn't surprised.

"There's something you ought to understand, Miss Wadsworth." I emphasized the Miss. It didn't seem to bother her. I like that in a dame. "I don't change history for my clients. I can, but I won't. You probably think if somebody pays me enough, I might bend the rules, but I never do. Clear?" That speech usually filters out the

crazies, people who want things to have been just a *little* bit different, losers with the big dream.

"I understand that, Mr. Hardy. But if someone else has already changed history, you could discover that and . . . rectify the situation. Is that not correct?"

"Yes, Miss Wadsworth," I said, mocking her rich-girl formality. "That is correct." She didn't get riled at me. Had her emotions under control. Very rare for a woman. "Are you telling me that someone has tampered with reality to do you out of your inheritance?"

"Yes. Exactly that." Her eyes were steady, but she had a curious expression on her face, as if she were studying me.

I don't mind. Lots of people look at me that way. A time detective is a strange person. He's got to be. Some people can handle paradoxes; some can't. I'm one of the few who can, that's all.

I lit a cigarette, the start of the second pack of the day. It was only noon. What the hell. "Miss Wadsworth, you realize this is a fairly common complaint, being done out of the family fortune. Everyone who gets disinherited thinks of time tampering, but it's almost never a factor."

"It is in this case, Mr. Hardy."

They all say that. "Why is it," I asked her, "you seem to remember the, ah, original sequence? In a reality change, memories are altered along with everything else. How can you be certain that time has been tampered with?" That question usually ends it right there.

"I was away on vacation. The ancient world, five epochs in two weeks." I whistled. This dame was *rich*. "I know it's expensive," she went on, "but I could afford it. Then."

"So when the change happened, you were unaffected. Sounds reasonable. But why would the criminal choose then of all moments to make his move? If he waited until you came back, he would have wiped your memory and had a perfect crime."

"Or she."

"Yeah. Or she." This was some dame.

"No one knew I was gone. I traveled under an assumed name. When one has as much money as I have—as I had—it's the safest thing to do."

"I can check your story with the travel people."

"I know." She was a real cool customer.

I had nothing else to do that afternoon. I put my feet on the desk, careful not to let her see the bottoms of my shoes, took a deep drag on my cigarette, and said: "Start at the beginning. The original beginning."

Her story was pretty much the way I remembered it from the papers. She had grown up as her father's darling. That I could easily believe. He was fifty when he first got married, and Pat didn't come along until five years later when he had about given up hope of ever having children. His wife died a few years later, and then Pat was all he had. He gave her everything money could buy.

He had plenty to give. Wadsworth had already been rich when he teamed up with Aabner Aabbott, the inventor of time travel; and Aabbott's invention made Wadsworth even richer—by far. The two of them were equal partners, Wadsworth's money and Aabbott's brains. And all of it the future inheritance of little Patricia.

None of that had been changed. It was near the date of Wadsworth's death that time had gone haywire. The way Pat remembered it was far different from the way it had played across the headlines recently.

In this reality, the one Pat said was all wrong, old man Wadsworth had hired a real cutie-pie named Linda Honeywell as his nurse about a month before he died. Somehow—ha!—Nursie had wormed her way into the old coot's affections and got him to marry her and change his will, leaving her everything. Dames. They're all alike.

But according to Pat, nothing like that had happened, not the first time around anyway. According to her version of reality, when dear old Dad died, his nurse was an ancient hag who had been with the family for years, and darling daughter inherited the world's sixth largest industrial empire.

At first she stayed at home, grieving for her beloved father. Then, to get away from it all, she decided to go on a rare, once in a lifetime tour of the past, the glory of Greece, the grandeur of Rome, all that stuff, trying to forget her sorrow. And when she returned she learned that she wasn't an heiress after all.

Linda Honeywell, a curvaceous, auburn-haired bombshell, had gone from being Wadsworth's nurse to being his widow. She inherited all the loot, then married a paunchy slob named Creighton Despard—Wadsworth's lawyer no less.

Yeah, that's the way I thought it was. Then there was a big court battle over the estate. Nursie always showing up weeping, veiled, dressed in black, accompanied by her new husband, the bloated, pear-shaped Creighton Despard, who testified that Wadsworth's will was perfectly valid—after all, his law firm had prepared it. The papers loved it. Pat lost the case, then Nursie vanished, and now

Despard was in charge of the swag.

"Did you know Despard?" I asked.

"Not very well. He was only at our house a few times to see my father about legal matters. I could never stand him. You can't imagine what it was like when I came back from my trip and there he was in my house—my house! He was wearing a dressing gown with an ascot, playing the role of a rich man, with my money. And he laughed at me, Mr. Hardy. I stood there in the doorway of my own house and he laughed at me, his belly shaking under that silk robe. He knew! I had come home to a changed reality and he knew!"

Tears formed in her eyes. She put her head down, took out a tissue, and dried her eyes. I thought about what she had said.

She told a good story, coherent, self-consistent. I was impressed. This dish was no kook. But I had a couple of questions.

"He shouldn't have expected you to show up at the house. If he's the one who altered reality, it's the last thing he thought you would do. Why wasn't he shocked to see you?"

"He must have searched for me right after the reality change, and when he couldn't find me, he figured out what had happened. Maybe he traced me. He was my father's lawyer; he could have done it. Then he knew he had blundered, but he also knew there was nothing I could do about it."

"So you challenged the will?"

"Yes. I thought it was my best chance, what with my father's illness and diminished capacity. At least my lawyers said I had a chance. But they were wrong."

"Did you tell anyone that you suspected time tampering?"

"No. I didn't think anyone would believe me." She looked at me questioningly, maybe to be assured that I at least believed her. I wanted to, but that's the sort of thing to guard against in this business, so I kept my face a mask.

"Also," she continued, "I wanted Despard to think I was pinning all my hopes on the trial. I couldn't risk another change. I was lucky being away for the first one. Besides, I might have won the case."

"But you didn't."

She looked at me with her big eyes. They were moist, but she wasn't crying any more. She didn't try to use her tears, like most women. "Will you help me, Mr. Hardy?" she asked.

I got up, walked to the window, and looked into the alley behind my office. Trash piles, garbage cans. Not very pretty, but I had my reasons. Money was one of them—or rather, lack of money. I was in no position to turn down business. Besides, this Wadsworth dame

was really something.

I turned and looked at her. "I charge a thousand a day. Plus expenses."

She seemed shocked.

"That's a thousand for one of our days, not historical days. If I have to go back and forth a century or so, that's my problem, not yours. All you pay for is straight realtime, as you live it until I finish the job."

She relaxed. "If you can restore time to what it was, I'll double it."

"Fine. Ten thousand in advance," I said. "Non-refundable."

She tensed again. "I don't have that much money, Mr. Hardy. Not any more." She took a deep breath. "This isn't easy for someone like me to say, but . . ." Her voice dropped to a whisper. "I'm almost broke."

I turned back to the window. Time travel has its moments, but it's a tough way to make a buck.

"You're my last hope, Mr. Hardy."

Against my better judgment, I went back to my seat and locked eyes with her. It's hard to explain the way it sometimes happens. You see a woman and there's this sudden shock, like recognition, but not really. It's weird, and when it hits you, it hits hard.

"All right," I told her. "This'll be a contingency fee. But in that case, when the job's done, you pay ten times the usual amount."

"Agreed."

I signed her up, then spent a few more hours going over her story again, this time in detail, putting it all into the computer. And while we worked, I was aware of a vague feeling of foreboding, which I shrugged off as being normal for a new job. But part of it, I knew, was the spellbinding effect of simply being with Patricia Wadsworth.

THREE

I spent the rest of the day alone with my computer doing the crud-work of this business, sorting out Pat's data, testing various hypotheses, folding in facts from the memory banks, running it all through the machine's brain and mine until we were both satisfied and the printer rolled out a mural-sized flow chart of causes and effects.

I hung it up on the wall, stood back and took a good look. They're all alike from a distance, like a map of some river running left to

right, with lots of streams and creeks flowing in: the original sequence and all its causes. That part was in black, neatly labeled and dated, ending with Pat's trip to the past when everything changed. From that point on, the sequence was in red, also with contributing causes labeled and dated, and ranked in order of likelihood of being the moment of criminal time-tampering.

The red part was the altered sequence, present reality, the reality Pat and I lived in, the world where she was almost penniless and Creighton Despard controlled her father's wealth. Pat alone remembered the way things used to be, but that wasn't on the chart. All it showed was the red ink of the present—realtime—which it was now my job to destroy.

The computer is programmed to make a dozen checks for order, causality, consistency, congruity, clarity, probability—all to test if a client's story is a plausible version of reality. It isn't easily fooled, and neither am I. Pat's version of reality checked out. Ninety-nines across the board. Full moral authority to proceed. So I did.

First, the mark-up. Dates can drive you crazy in the time travel business; and if the dates don't get you, the grammar will. So like most guys in this peculiar occupation, I just number everything and forget all about time.

I drew a series of vertical lines down the chart, perpendicular to the time flow, each coinciding with a main event, and I numbered them from ten to ninety. It's good to leave some room at the beginning, in case you have to go back farther than you think, and you might need higher numbers for wrap-up details after the job is done, to tidy things up—as tidy as they can get, anyway. Reality's a pretty messy affair nowadays. I should know. I've been there.

I regarded the chart. Looked like a simple set of events compared to some jobs I've seen. There were about three, maybe four places where Despard could have stepped in and changed things. My job was straightforward: find the tampering and prevent it. Then things would clear up by themselves.

I studied each event in the sequence:

Point 10—Despard gets his idea to change reality and steal the Wadsworth fortune. I had no precise moment for this, so that line was drawn arbitrarily.

Point 20—Despard hires Linda Honeywell to act as Wadsworth's new nurse, and the old nurse gets fired. The tampering was most likely to be here.

Point 30—Linda Honeywell marries Pat's father, the ideal catch—an eighty-year-old, ailing billionaire.

Point 40—Old man Wadsworth makes a new will the day after his wedding, leaving everything to his new sweetie. Yeah. There might have been tampering here, too.

Point 50—Wadsworth dies. Another tampering possibility. Despard and Nursie could have croaked him.

Point 60—Pat leaves on her vacation in time (a key event in both realities) while Despard commits his criminal deed.

Point 70—Nursie marries Despard. True love.

Point 80—Pat returns, launches the will contest, and loses.

Point 90—Nursie mysteriously vanishes, leaving Despard where he always wanted to be—alone with Wadsworth's billions.

The facts were easy, but they never give you the whole picture. I need to see the people to get the feel and flavor of things. Somewhere between 50 and 60 was the old man's funeral. The heavies would be there—Nursie, the grieving widow, being comforted by Creighton Despard, the family's faithful advisor. Yeah.

I wanted to get a good look at that pair.

FOUR

Some guys make a big deal out of time travel. They don't use words, just mathematics. I prefer to take things as they are.

The original sequence of events, as nearly as anyone can determine it these days, is the natural flow of causes and effects, untouched by time travel. Government types usually describe it as the accidental sequence, or they call it raw, crude, primitive, or chaotic. After they've messed things up, they think of their handiwork as enriched, refined, ordered, or developed. One of these days those creeps are going to plan themselves right out of the universe.

Then you've got the religious types. To them the original sequence is an object of worship. It's natural, uncontaminated, innocent, simple, pure, and true. Time travel has created a world they see as artificial, perverted, false, and contrived. They run around feeling corrupt and guilty, praying for true time to be restored so they'll all be cleansed.

Me, I'm neither a bureaucrat nor a fanatic. I'm a guy with a job to do. I can't spend my days worrying about the way things might have been, even if they really used to be that way. To me, *this* is realtime, the reality I live in. Anything else is a potential revision. Things are complicated enough without getting emotional about it. Time is a business, that's all.

There are changes I'll make and those I won't. It's not hard to figure it out. Pat's cause was just, so I took her case. No big deal.

Like every other occupation, mine has certain requirements. I needed clothes, a place to stay, and money. Lots of money.

Everyone in the time trade has his own bag of tricks. Me, I rob banks. To be exact, I rob them just before they're going to get robbed anyway. I take what I need and the thieves get the rest. They get the blame, too.

I keep a little list—it's almost a book, actually—of bank robberies over the last couple of centuries. I'm always able to locate one that's fairly handy. From there it's easy.

First I walk in and check the layout. Next I get in my module—my time coupé—and head for the period when the place is about to be built. Then I drag the old time-tub over to the spot where the vault will be and climb in. Set the controls for the night before the big heist, climb out and help myself. So that's what I did.

This time, I figured thirty grand would be enough. I could always go back for more. I stashed it in my briefcase and left the same way I got in.

One of these days I'm going to run into someone else using the same gimmick, but it hasn't happened yet. I'm not sure why it hasn't, but I don't care, either. If you can't handle a few uncertainties, you shouldn't be in this business.

Then I went back a month and headed for a posh tailor shop. I always like to spend the dough before I steal it. That way no one gets in trouble for passing hot currency.

"Pops," I said to the old man behind the counter, "I need some new suits. Ten of them. The best you can make. And shirts, ties, shoes—the works."

He looked at me a bit disdainfully. I was wearing dark slacks and a plain white shirt. Not the most impressive outfit, but wearing it you can walk down any street of almost any city during a full century without looking out of place.

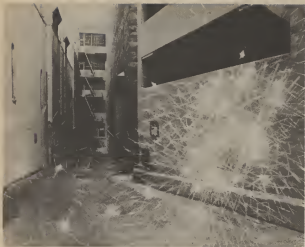
I put a couple of hundreds down on the counter and his eyes widened with respect.

"Yes sir!" he snapped. "Just let me take your measurements. We have a fine selection of fabrics . . ."

Before long I had my duds selected. He said everything would take two weeks. I said fine, walked out, ducked into the alley where the module was parked, climbed in and emerged two weeks later.

"Hello, Pops. Remember me?"

"Indeed, sir. Your garments are ready. Now if you'd like to try



them on . . . ”

I paid up, packed the stuff in the luggage Pops had obtained for me, and taxied to the best hotel in town, dressed in the finest fashion of the day. I took a suite, reserved it for a few months, paid in cash, unpacked and taxied back to the module. I was almost set up.

Into my old buggy again, forward to the day before the bank robbery—a short, two-week hop—and I strolled into the bank, my expensive new briefcase bulging with stolen cash. I made my deposit, told the vice president—who was treating me with the greatest respect—to mail the checkbooks to my hotel when they were ready, and I took my leave, fast. I didn’t want to be there for the robbery tomorrow or for my own visit later on that evening.

Once again to the module, a few more weeks into the future—not my own future, all of this was in my past. What I mean is . . . skip it. I got out at point 10 on my flow chart, parked in the alley behind the hotel and went to my suite to freshen up.

I was set now. I had a base of operations, plenty of the right kind

of clothes, and money in the bank. The whole thing had taken a couple of hours.

I was ready to begin.

FIVE

Most funerals are pretty much alike, unless you belong to a tribe of headhunters or something. This one was—well—typically funeral. The day was obligingly overcast, chilly, threatening rain. There were a lot of mourners. That's one of the advantages of dying rich. Everybody wants to be your friend.

I stood there in my trenchcoat, cigarette dangling from my lips, looking over the crowd. Dark suits, black dresses, long, sad faces. At the side of the grave, a churchman was delivering a sermon.

I knew Pat wouldn't be there. She told me she had stayed home, grief-stricken. I was looking for Despard and Honeywell.

Then I saw them. There could be no mistaking Creighton Despard. Dark curly hair, round face, no neck, pear-shaped body, tiny, almost child-sized hands—caricature of a bloated toad. His facial features were small, quite out of place on that massive head. As a boy he might have been angelic-looking.

Standing beside Creighton, and almost a full head taller, was Linda Honeywell, the weeping widow. She was dressed appropriately, a dark veil covering her face—much to my annoyance—but even the grim severity of her black attire couldn't conceal the exquisite shape that had won her the Wadsworth billions. She was some dish, all right.

Then, as I watched, Creighton took her hand in one of his and patted it comfortingly with the other. I shuddered at the sight—her slender hand in those stubby pink paws of his. As a lover, Creighton was definitely grotesque.

I was staring at Despard, an unreasoning hatred welling up within me. Not only had he stolen Pat's inheritance, not only had he tampered with reality—the ultimate crime!—but he, short, soft, and repulsive, he dared to fancy himself a user of beautiful women. I knew what no one there could yet know: after her forthcoming marriage to Despard, Linda Honeywell was going to disappear. I saw Despard as more than a thief—and maybe murderer too—more even than a criminal time-changer. I saw him as despicable in his own right.

Just then he glanced up and our eyes met. Two blue pits in a sea of pink roundness. He smiled as if he recognized me, then bent his

head and whispered something to Linda Honeywell. Her veiled face lifted in my direction. The two of them were staring directly at me. But they couldn't know me—not yet.

For a moment there were only the three of us. All others receded from my consciousness—the droning clergyman, the throng of mourners—just me, a stranger to this instant of time, and the two of them, conspirators in a crime against reality itself. They knew me, but that shouldn't have been possible.

As if she too were oblivious to the others, Linda Honeywell lifted up her veil and her gaze met mine, the grave of her husband yawning between us. She smiled, and my expression must have really amused her, because for the briefest instant her smile became a laugh. Then she replaced her veil and once more gave her hand to Creighton Despard.

I've seen some startling things in my career, but what I saw beneath that veil was the biggest surprise of my life.

SIX

"What the hell is going on, anyway?"

"If I told you everything at the start you wouldn't have believed me." Pat looked nervous, but unafraid. She had come quickly when I called her to get over to my office. I was mad. Really mad.

"Now look, young lady—"

"Don't call me that. You're not much older than I am."

"I'm thirty, and don't change the subject. That girl at the funeral, Linda Honeywell or whatever her name is, it was you!"

"No. Don't you see? It's all part of Despard's plot."

"I don't see. Explain it to me."

"You're not going to believe me now. You've already made up your mind not to believe me."

"I know what I saw. That was you at the funeral, holding hands with Creighton, laughing. I don't know what your game is, but I'm not going to dash all over time, running around every which when—without pay, no less—while you make a fool of me."

"I'm not the one who's making a fool of you. Creighton is."

"What?"

"Will you listen?"

"Yeah. I'll listen." I mashed out my cigarette and threw a switch. "My computer's listening too. Go ahead."

She took a deep breath. I was mad, but when a girl like Pat takes

a deep breath, you pay attention. "My father was very much in love with my mother," she began.

"So?"

"When she died, a few years after I was born, my father transferred all that love to me."

"That's natural."

"Yes. But you see, I grew up to look almost exactly like my mother." She reached into her purse. "Here. These are some pictures of her."

"Yeah. You do look alike. Mothers and daughters often do. So what?"

"Creighton knew all of this. He took advantage of it. He found that Honeywell woman just so he could prey on my father's weakness: his love for my mother and for me."

"How could he find your exact look-alike?"

"How do I know? Maybe he searched for years. Maybe he found someone similar and had plastic surgery done, dyed her hair brown, had her figure altered here and there. Cheekbones can be made higher, noses smaller. Besides, my face is a fairly common type. It wouldn't be that difficult. He could afford the search, and the medical bills, if that were necessary. The stakes were high enough."

I studied her while I lit a cigarette. Her facial type was, as she said, not that uncommon. But she was being far too modest. To my mind it would be impossible to find her match. She was really something. Still, with the right doctor . . .

"Oh, believe me, Ben. Despard is maniacally clever. He knew exactly what he had to do to get my father's money; and whatever he had to do, he did it. Honeywell was laughing because she knew you would find the whole thing incredible." She dropped her head. "You don't believe me, do you?" she asked softly.

"I don't know what to believe."

"Then how do you explain the fact that Linda Honeywell married Creighton? Would I do that?"

I didn't answer.

"And now she's gone and Creighton has my father's money. How do you explain that?"

She had me there. "I can't explain it."

"That's why you have to believe me." Those big eyes of hers gazed into mine. "Do you?" she asked.

I turned to the computer and hit a few buttons. The answer flashed across the display. It was still ninety-nines, all the way. "Yeah," I said. "I believe you."

She smiled, and I smiled back, but deep down I knew that a man who believes a beautiful woman is the biggest dreamer of all.

SEVEN

When Pat left I really went to work with the computer. All kinds of red flags were waving in my head. Pat's story was too slick, Despard too evil. All my instincts told me something was wrong. But the computer wasn't worried, and that bothered me.

I tried all sorts of variables. Nothing checked out except the story she had given me.

Hypothesis: Pat and Despard, working together. Conclusion: Most unlikely. Reasons: a) high likelihood of physical incompatibility, b) no motive. Conduct inconsistent with natural desire of Pat to keep her inheritance for herself.

Hypothesis: Pat and Honeywell are the same person. Conclusion: Most unlikely. Reasons: same as above.

Hypothesis: Hidden variable which, when uncovered, will make either or both of the first two hypotheses probable. Conclusion: Most unlikely. Reasons: a) high scores obtained by client's version of reality, b) Simplicity Principle.

Yeah, the Simplicity Principle. The operative rule in this business—the thing that makes my job possible—is that time crime is so complicated, and so much planning and money is needed for even the simplest reality change, a thief almost always does the easiest thing to accomplish his purpose. It takes special training and experience to be the least bit subtle.

Creighton Despard was a lawyer. He shouldn't have the knowledge to violate the Simplicity Principle. Actually, it was amazing he had achieved as much as he had.

I sat there, chain smoking, reviewing everything. Then I took one last step. I ran some programs to check out the computer. It was perfect. I suspected as much, but in this business you cover all angles.

I lit a cigarette, thinking. Assuming Pat wanted the money—which I didn't doubt for a moment, and assuming the Simplicity Principle held and the computer was working . . .

I reached into my bottom desk drawer, took out a bottle and an old shot glass, poured myself a stiff one and raised it high.

"Okay, Pat," I said to no one in particular. "I really do believe you." The booze felt good.

I pictured Pat Wadsworth's perfect face in my mind. I felt even better.

Then the phone rang.

EIGHT

"It's Pat," she said, as soon as I said hello. Her voice was tense. "Can you come over right away?"

"What's wrong?"

"I'll tell you when you get here. Hurry, please!"

She gave me her address and I went flying out the door.

As soon as she let me in I could see what the problem was. Her place had been torn apart—literally. It was no burglary; at least it didn't look like any I've ever seen. Furniture was smashed, upholstery slashed, crazed, obscene threats scrawled over the walls in purple paint. Really creepy looking.

"It was like this when I came in," she said, her voice trembling. "I called you right away."

She didn't say it, but she didn't have to. It was very much implied: *You're all I have, Ben.*

"Do you have any enemies other than Despard?"

She shook her head. "No."

"He's trying to frighten you off," I said, looking around at the wreckage. I swiped at some debris with my foot. "Want to give up?"

"No." She had guts.

"Well, you can't stay here, that's for sure."

"I don't know where to go." Her voice cracked. "I can't afford to get another place. Even if I could, he'd find me. He's probably having me watched." She paused, then: "I'm afraid, Ben."

For the first time since I met her, Patricia Wadsworth seemed vulnerable. I don't mean that she was liable to be killed. Hell, we're all vulnerable. It was more personal than that, a lowering of barriers. She was letting me see her as vulnerable. I don't like displays of weakness in anyone, especially women because it's one of their favorite weapons; but this was different.

"Let's go to my place," I told her. "I don't think he'll try anything there. Most people are intimidated by guys in my line of work, and Creighton doesn't impress me as the courageous type."

She hesitated, but only for a moment. Even in extreme crises, dames still play at being dames. "All right, Ben."

I opened the door to my place and walked in behind her.

"Boy, what a mess," she blurted. They all say something like that.

"You're free to go."

"Did anyone ever tell you you're a nice guy?"

"Nope." I threw my beat-up trenchcoat onto a chair.

"Ever wonder why?"

"Look, sweetie. Let's get one thing straight. This place is a mess. So is my office, in case you didn't notice. I'm comfortable that way. It's my nature. I'm in a messy business. Time is a mess. I understand it; I can live with it. Most people would go crazy in my racket, but I like it. I'm good at it, too." I waved my arm to sweep across the whole room. "All this . . . it's part of me, that's all."

"I'm sorry."

"Don't say that. Apologies are a bunch of crap. If you feel like cleaning the ashtrays, go ahead. Do what you like, but there's one thing I don't need, and that's some dame coming in here and trying to change *me*. Clear?" I was being hard on her, and I knew it, and I didn't really know why. But hell, she wasn't that different from other dames, and they all try the same stuff. As far as I'm concerned, if they want to fit in, fine, but I already fit in and I like things the way they are. After changing reality for a living, a man likes to come home to his own mess.

She smiled at me, as if she understood, and suddenly we weren't fighting any more. "You need a drink," she announced. "Me too. Where's the booze in this dump?"

I told her and she made me a good one. Dames. Who can figure them out?

We talked. She told me about her life, how her father had been miserable for years after her mother died, so that even with the billions from Aabbott's time machine he was never really happy.

"How did your mother die?" I asked her.

"It was a yachting accident. She was swept overboard while my father was at the wheel. He never forgave himself."

"How did it happen?"

"I'm not sure. No one saw it happen. One minute she was there, then she wasn't. Only the two of them were aboard, and he thought she was in her cabin reading. When he went to look for her she was gone. He radioed for help, but they didn't even know where to start looking. They searched for days. He was . . . desolate."

"How old were you?"

"Five, but I remember it vividly. He was never the same again." Her expression changed. "Despard, that filthy pig! He knew all about

it. He had been close to my father for years. He knew just what he was doing when he brought Linda Honeywell into the picture. My father was eighty years old, not well at all, and . . ."

"Yeah," was all I said.

Suddenly her mood brightened. "You know something, Ben? I feel better now. For the first time since I came home and found everything changed, I feel confident again. Thank you."

I was touched. Here she was, done out of her inheritance, cast adrift in a new reality where she was virtually a pauper, her apartment had just been ripped apart by a madman, and she felt confident.

"Why thank me?"

"Because you're strong. All my life I've known weak men. Even my father was weak, always playing by impossible rules like true love. Look how he mooned over my mother for twenty years. For a while, sure. I can understand that. But for the rest of his life . . . that was wrong. And what did it get him? He was putty in Despard's hands. But you, you're different. With your time machine—"

"Module. It's a module."

"Whatever. You can do anything, change anything. You can have anything you want in the whole world."

"It doesn't really work like that." The drinks were hitting me pretty hard, and I didn't feel like explaining the limitations I work under. Hell, if I were powerful, why did I have a dump of an apartment and a dingy office, complete with a pile of letters threatening to evict me for non-payment of rent? But I let her talk on. Almost everyone has fantasies about time travel, and very few of us know how unglamorous it really is. Especially if you follow the rules, which I do. That's why I can only be rich in the past, where it doesn't matter. Here I'm as helpless as the next guy. More, because I don't cheat. I've seen what happens when people try to pull reality apart, and it isn't pleasant.

"Are you sure you don't mind my staying here?"

"No. I don't mind. Just don't try to change me."

She came over, sat down in my lap, put her arms around my neck and looked at me with those big eyes of hers. So I kissed her.

Yeah.

NINE

The next morning we read the papers and drank coffee in bed.

"You make it too strong," she said, putting down her cup.

"Okay, you make it from now on."

She looked at the ashtray beside me. It was full. "And you smoke too much."

"Now look—"

"All right, all right." She laughed. "Tell me about yourself. I never met anyone in your business before. Free-lance, I mean."

"There's not too many of us outside the government and the big companies. Lots of guys try it, most burn out pretty quick."

"But not you."

"No. Not me."

"You don't like to talk about yourself, do you?"

"There's not much to tell. I'm an orphan. Grew up in one of those places supported by the Aabbott Foundation."

"Really? Oh, that's right. The Foundation."

I sat up and put out my cigarette. "You're one of the few people who actually knew Aabbott. Tell me about him." I'm good at changing the subject.

She laughed again. "I didn't know him all that well. He was my father's partner, that's all. My father was in many businesses, and backing Aabbott was just one more thing. He was never around much."

"But you must remember. Hell, he was world-famous. You were only a kid but you must have been impressed."

"I was impressed with what a weirdo he was, that bushy beard and funny accent. My father thought he was strange too, although my mother was fond of him, I think. The truth is that he treated us like he treated everyone else. We never got to know him."

I lit another cigarette. "That helps to prove my theory."

"Everyone has a theory about Aabner Aabbott. What's yours?"

"That he was an orphan, like me, and had no past to talk about. At least I like to think so. Why else would he leave everything he owned to his foundation, to be used solely for the support of orphanages? Of course he was an orphan. Nothing else makes sense."

She tried my coffee again, grimaced, and put it aside. "For twenty years, people have tried to make sense out of Aabbott, and no one has succeeded. He was a complete unknown when my father met and backed him. He never discussed his past. When he invented the time machine—"

"That was the same year you were born?"

"Yes. And suddenly he became one of the richest men in the world. My father was richer, of course. He had other holdings besides half of Aabbott's invention."

"Yeah."

"My father never understood him. No interviews, no photographs—except those snapped without his permission. It was weird."

"Not really. Look at it this way. When you invent a time machine, you know that from then on, everyone in the future who's unhappy or dissatisfied will single you out as the focal point in history. Aabbott knew he'd be the likely target for a whole future of malcontents, and he had to protect his past."

"I never thought of that."

"It's obvious."

"To you."

I shrugged. "Anyway, it worked. No one ever stopped him, and many have tried. Sure he was obsessed with secrecy. He had to be."

A sensitive look crossed Pat's face. "He must have been a very frightened man."

"Yeah. From the moment he realized he was close to his discovery, he knew he would always be in jeopardy. So—at least this is how I imagine it—he changed his name, obliterated all clues to his past, hitched up with your father for financial backing, brought forth his miracle, then kept his mouth shut."

"It sounds . . . horrible."

"It must have been."

"Then what happened to him?"

"Who knows? Five years of being constantly hounded by the press. It can do strange things to anyone, especially someone as frightened—and with good reason—as Aabbott. He didn't even risk explaining why he wouldn't talk. Maybe he changed his name again and ran away. That's the rest of my theory. He gave his money to his foundation and split. Maybe he's still alive somewhere, still afraid."

"Ben?"

"Yes?"

"What's your next move?"

"Simple. I'm going to the day your father's nurse was replaced by Honeywell. If that's where Creighton's tampering occurred . . ."

"You mean it could all be over today?"

"Sure, if I stop the tampering."

She looked puzzled. "Then . . . what happens?"

"Nothing. Nothing at all. This world, this reality, will cease to exist. After all, it's just an altered sequence. The main sequence will be all there is. You will have come back from your time trip, still an heiress, and all your problems will be over. They never will

have happened."

"But . . ."

I chuckled. "Don't worry about me. I'll come back with my memory intact, but I'll be the only one who does. Not even Creighton will be aware of the restoration. I'll be safe because I'll be in my module when the tampering is undone."

"Then how will I pay you? I won't even know you."

"That's all taken care of. Our contract is stored in my module. I'll bring it back with me and you'll pay. The courts enforce such things. There's a special law on it. How else could guys in my business make a living?"

She thought for a moment. "Last night. That will never have happened?"

"No. Not for you. I'll remember it though."

"Oh, Ben." She moved close to me.

Afterwards, there were tears in her eyes. She asked if I would renew our friendship in the restored reality and I told her I would, but I knew it wouldn't work. It never does. I would just be some guy who showed up and forced her to pay a contract she never remembered, and she'd be rich and haughty, and from her point of view the less she had to do with me the better.

I know. It's always like that. Like I say, time is a mess. And it waits for no one, and I had to get on with the job.

TEN

Pat had given me the plans to her father's house, so it was easy getting the module into the correct position. I went to the time when the place was under construction and put the old chrono-crate where the master bedroom's closet would be. Then I had to scan a bit to find the right moment, point 20 on my flow chart, when Linda Honeywell became Wadsworth's nurse.

There was no crack in the closet door to watch through. I went to the day before, removed the door when no one was around, planed it down in a convenient spot and replaced it a few minutes after I had taken it down. I took the extra precaution of having it refinished by an expert so my handiwork wouldn't show.

So there I was, hiding in the closet with my module, peering into the sleeping chamber while the old boy lay in his bed attended by old faithful. The bedroom door opened and in came Despard and Honeywell. Yeah, this was the moment I was waiting for.

While Creighton was explaining to Wadsworth the necessity of hiring a nurse who was specially trained to look after his particular ailments, and making sure the old fogey got a good look at Honeywell, I was reading my instruments.

They're designed to record any traces of temporal interference—something to do with energy surges caused by world-line deflections or something. Anyway, all I had to do was read the meters and subtract the traces of my own presence. Any residual energy would show that I wasn't the only one who didn't belong in this moment, and that's all the evidence I need to step in and change things. Without such evidence, I'm the time tamperer; and that's something I don't intend to be.

It was confusing. Maybe I was trying to do too many things at once: follow the action in the bedroom, read my instruments, keep quiet so I wouldn't reveal my presence. Not only that, but I was sitting in the dark. Still, enough light was coming in from the crack I had made so I could see what I was doing. Yet somehow, no matter how I jiggled my equipment, the only traces I picked up were my own.

Creighton had propped the old man up with pillows to give him a better look at Honeywell. She was smiling at the billionaire, pouring on the charm. The resemblance to Pat was uncanny.

Then I froze. Creighton had turned and was staring at the door of my closet. He was smiling, almost as if he could see right through to me. It only lasted for a second, then he went back to talking with Wadsworth.

For an eighty-year-old geezer, Pat's father still had an eye for the ladies. Honeywell was soothing his brow with a cool cloth, and Wadsworth was saying, "Perhaps it *would* be better to have a specialist. I think I agree with you, Creighton." His voice was slow and raspy.

The regular nurse was protesting, mentioning all her years of loyal service, and Despard was assuring her that she would be well taken care of; after all, her employer was a man of considerable means and not at all unmindful of her valuable devotions in the past; but one must be aware that Mr. Wadsworth needs the very latest in nursing care . . .

Linda Honeywell was leaning down, adjusting the pillows, inquiring as to whether things were comfortable enough, and the old coot was sporting the silliest grin I ever saw. Yeah, things were going well for sneaky Creighton.

I went back to my instruments, trying to make sense of the readings, because if Wadsworth *really* hired Honeywell, Pat would have

remembered it. Then a glow caught my eye. Something on one of the closet walls was giving off a green, phosphorescent light. I brushed aside some clothing. It was an envelope taped to the wall. My name was on it. What the hell was going on?

I snatched the thing, climbed into the module as silently as I could and made ready to go. The last thing I saw through the crack in the door was Creighton Despard, smiling again in my direction.

I hit the controls and was back when the house was under construction. I tore open the envelope. Inside was a note, brief and very much to the point:

"Peek-a-boo, Mr. Hardy."

It was signed by Creighton Despard.

ELEVEN

Pat was waiting in my office where I had left her for the trip we both assumed would be the end of the job. I thought she'd be disappointed to see me, but she embraced me warmly and buried her head in my chest.

"At first I kept expecting the world to end, just the way you said," she murmured. "Then, when the hours went by and everything stayed the same, I thought something must have happened to you. Oh, Ben. I was so worried. If you hadn't come back to me . . ."

For a failed mission, it was a pretty good homecoming. I told her what had happened and showed her the note from Creighton. She read it, then crushed it in her fist. "Despard!" was all she said. She kept clutching the paper until her knuckles turned white.

"Easy," I said. "I'll get him. That was the wrong time, that's all. The tampering must have been at some other point. Besides," I grinned at her, "this means we have another day together. And I'll get a bigger fee, too."

"How can you talk about money? I thought you were dead."

"Most unlikely, as my computer would say. Why? Because I'm here." I kissed her to prove it.

When we finally separated, I took out the flow chart. "Here's the next most likely point," I showed her. "Point 40—the new will. Even if your father willingly hired Honeywell, then fell in love and married her, he wasn't likely to cut you completely out of his will without tampering. So that's my next move."

"And if that fails?"

"Then I'll try point 50—his death. He may have freely made the

Honeywell will, and then changed it to put you back in, and Despard intervened to cause his death prematurely."

"What if that isn't it either?"

"It's got to be. I've never seen a job that didn't work out in the first three tries." I told her about the Simplicity Principle.

"Suppose you had found tampering today," she said. "How would you have stopped it?"

"That's easy. All I had to do was go back half an hour or so, park my buggy by the front of the house, and wait for Creighton to arrive. Then I would have introduced myself, told him the jig was up, and suggested that he get back to his own module and go home."

"That's all? Just like that?"

"Sure. What did you expect—swordplay?"

"But couldn't he go back another half hour and stop you from stopping him?"

I laughed. "It doesn't work that way. If it did, then I'd go back yet another half hour, stop him, then he'd go back, stop me, and we'd keep regressing until we were two old men, burning up our lifespans trying to beat each other to the punch."

She looked puzzled. "Why doesn't that happen?"

"Because he did the tampering. As soon as I stop him, it's over. Time is healed. Things are back to square one, before any of it happened. If he thinks of tampering again, he'll do the same thing, but he's already been blocked. It's a loop; he'll never get anywhere. Time's tough. It isn't easy to throw it off the track, and when you do, one good kick will set it right again—or nearly so. I still remember the variation."

"Things are never completely what they were?"

"Right, but reality isn't made of sugar candy. It tolerates a lot. Stop worrying. I'll get you back where you belong."

"But not until tomorrow."

I nodded.

She smiled at me. "That means we have tonight."

TWELVE

That night, as Pat lay asleep beside me, I reviewed the case in my mind. There were loose ends that troubled me.

Item: Why were there no traces at the hiring of Linda Honeywell? Although I reassured Pat that today's failure was routine, I knew that jobs rarely go beyond the first degree of probability. Could

Despard be more sophisticated than I thought?

Item: How did Creighton get his hands on a module in the first place? He wasn't trained, so he couldn't get insurance; and that meant no one would lease him a module. Black-market time-tampering costs a fortune; and Creighton, even with a successful law practice, didn't have *that* kind of money. I shrugged the question off. Time criminals always find a way, somehow.

Item: How did Despard and Honeywell recognize me at the funeral? Was I going to slip up on my next trip and reveal myself to them, so thereafter they'd laugh at what a bumbling fool I was?

Item: How did Creighton get that note into the closet—without traces—and how did he know I'd be there to find it? Did he have access to technology I didn't know about? I knew that was impossible. Correction: I thought it was impossible.

No matter how I turned things over, nothing fell into place. But one thing was for sure: time was most definitely out of joint, and Creighton Despard looked guilty as hell. Then another thought hit me.

Item: Thirty years ago a number of events occurred, all of which were now, somehow, factors in the case. Wadsworth married Pat's mother, Aabner Aabbott went into business with Wadsworth, and—what the hell, throw it into the pot—I'm thirty years old.

Another item: Five years later, Pat is born, Aabbott invents time travel. Five years after that Pat's mother dies . . .

I crushed out my cigarette and lit another. I was driving myself nuts. Maybe I'd been in this business too long and it was getting to me. I was seeing sequences within sequences. Normal events were beginning to look like suspicious trails leading to never-never land.

I started wondering what I might do if I left this crazy vocation. Get a job somewhere, working for somebody? Crap.

Another cigarette. What was I so worried about? Sure time is all fouled up. It would have to be, after Aabbott's invention. And if you can't handle some sloppiness here and there you should hang it up. But I can take it. Time is my business. Yeah.

But when I find the tampering, and stop it, then what have I got? Pat's rich again. I'll get paid, catch up on my old bills, make some mortgage payments on the module. But I'll lose Pat, and I don't want that.

For the first time in my career, I think about riding with the altered sequence, letting the criminal get away with it, because I'm falling in love with a girl in this reality who won't even know me in the real world.

Hell, who am I kidding? I've got a job to do and I'll do it. Ben Hardy, savior of reality, destroyer of worlds. Don't kid yourself, Ben. That's what you do: every time you interfere you destroy a universe and bring about another; and who knows if the one that results is the true one; and even if it is, why shouldn't the altered sequence have as much right to exist? It's here. It's reality.

No. It isn't reality. Or rather, it's the wrong reality. And your job is to set things right.

Besides, I love my work. I'm good at it. Take this job I'm on now: a beautiful girl, a stolen fortune, a villain to defeat, reality to win. Yeah.

I rolled over and went to sleep, holding Pat very close, certain that tomorrow's mission would succeed, hoping tomorrow wouldn't come, and knowing that no one, not even I, could hold back the dawn.

THIRTEEN

The law firm of Despard, Martindale, & West had grown large and prosperous representing Wadsworth's industrial empire. More than a hundred lawyers, they occupied three floors in a huge office building; and there were a dozen different conference rooms where a will signing could take place. I knew the date of the will, the day after Wadsworth married Honeywell; but finding the right room was going to be difficult.

Then, while rummaging through the receptionist's desk the night before, I found a paper assigning the conference rooms to various lawyers throughout the following day. I should have guessed it. So that Wadsworth, the firm's largest client, could be accommodated no matter how late he might be for his appointment, conference room number one was reserved for Despard for the entire afternoon.

I checked the place out: richly paneled walls, plush leather chairs—a room designed for occasions of importance. Adjacent to it was one of the smaller conference rooms, for matters slightly less momentous. I re-did the room assignment sheet, reserving the smaller room for Despard also, likewise for the entire afternoon. I gave the displaced lawyers different rooms. Some of them got squeezed pretty badly, but what the hell, they'd survive, even if some closing or deposition had to be conducted in the men's room. It was tampering, I suppose, but of such a low order of significance that I wouldn't lose any sleep over it.

I scanned my little room for the following afternoon. No one would interrupt me. Next I drilled a peep-hole so I could watch the goings-on next door, taking care to go ahead to the following evening to plug the hole up again. When I do a job, I do it right.

Then I climbed into my trusty time jalopy and scooted for the right moment. In conference room number one, Wadsworth, weak from his wedding night, but somehow managing to walk, was being ushered in by Despard, followed by two of his partners who would act as witnesses, three secretaries to take dictation, two associate lawyers for answering any questions that might arise, and a couple of flunkies to act as runners and do the fetching and toting for the exalted ones. All this just to sign a will. Wadsworth was getting the royal treatment.

Then, beneath the stately chandeliers, Despard began to read the document to all those assembled, stopping after each paragraph to ask Wadsworth if he understood it and if it really represented his testamentary intentions. At that moment I hated Creighton even more than before. He obviously knew there would be a court battle over that will, and he was building his case in advance. Poor Pat. With that room full of witnesses, she never had a chance.

Finally, Despard's performance reached its climax. "And are you certain, Mr. Wadsworth, that it is your desire to leave your entire estate to your new wife, making no provision whatsoever for your daughter, Patricia?"

The old man nodded. "That's right, Creighton," he croaked. "Everything to Linda." Women. They can really warp your brain.

"Very well then," said Despard, rubbing his tiny hands together, "if you'll begin signing each page, here at the bottom, in the presence of myself and these other witnesses . . ."

I took out my instruments and read the dials. Damn! No traces except my own. And I had just had the equipment checked. There could be no mistake. This was not an altered event. It was real.

With a sinking feeling, I watched as Wadsworth signed each page; then, like a well-rehearsed minuet of people and paper, each of the witnesses initialed each of the pages, then they all signed the last page, then yet another page was signed by everyone, this one being notarized, then the secretaries sat there and conformed all the copies. The Magna Carta couldn't have been signed with any more formality. All the while my mind was whirling. What had gone wrong?

Just before the gathering broke up, Despard took a blue-backed document out of his file and showed it to Wadsworth. "This is your

old will," Despard said. "I guess we won't be needing it any more," With that, he tore the thing in two and tossed it into a waste basket beneath the polished rosewood table.

I waited until they left, thinking. I'm still not sure why, but I wanted to have a look at the prior will. I was dressed in one of my expensive new suits, so I wouldn't look out of place in the corridor. I tried to put a lawyer-like expression on my face—sour—and stepped out of my hiding place. A few people passed me as I casually strolled into the next room. No one paid any attention. I scooped up the contents of the waste basket, dashed back to my original room, climbed into the module and was gone.

But not to the present. I headed instead for my fancy hotel suite. I knew Pat was waiting nervously in my office, but what the hell. I needed time to study the old will and get my thoughts in order.

That ripped-up will was a real shocker.

FOURTEEN

The original will was a joint will, signed by both of Pat's parents over twenty years ago. If Pat's mother died first, everything she owned went to her husband. If Wadsworth went first, his wife got a lifetime income, then everything went to charity. If they died together, the charity got everything right away. In all events, a small income was provided for Pat until she reached age twenty-one. Then nothing. Nothing at all.

I didn't have my computer with me so I worked it out in my head.

Item: Pat was never an heiress. Not even before Honeywell.

Item: Pat had no motive for trying to undo the Honeywell will, because she'd inherit nothing either way.

Question: Where did Pat get the money for her time trip? When her father died in the original sequence, she had no money. Trips to the far past are rare and cost fantastic sums. Would she blow her savings on a wild extravagance like that?

Hypothesis: There had to be a *third* will in the original sequence. Wadsworth recovered from the ecstasy of his wedding night and decided to leave his money to Pat after all. Maybe he even divorced Honeywell. Yeah. So Pat *was* an heiress. And she could easily afford her vacation.

That leaves Creighton as the only guy with a motive. He teamed up with Honeywell and went back to prevent the third will from being made. Yeah. He killed his client, and while he was at it he

planted that note for me to find, and he laughed at me at the funeral.

Item: No traces.

Item: Pat says she never heard of Honeywell in the original sequence, but Wadsworth married her fair and square.

Hypothesis: Is Pat in on it somehow, doubling as Honeywell? Can't be. Even if she had been the nurse, married her father, inherited his money—then why marry Creighton? And why then vanish as Honeywell, leaving everything in Creighton's hands? Absurd. No motive. Pat was in the clear.

Crazy hypothesis: Was there a double tampering? First, Pat and Despard conspire to gain the loot for Pat, acting as Honeywell. Okay. That makes sense. Pat had the motive; and Despard, as the family lawyer, made a useful accomplice. Then Pat doublecrosses him by refusing to pay off or something. Second, Creighton tampers on his own, causes the marriage of himself and Honeywell—how would he do that? No way. Besides, how could Honeywell vanish, leaving Pat to complain about things? Nonsense. And how could there be two different time crimes when I hadn't yet found traces of one?

Item: There was no tampering at the Wadsworth-Honeywell wedding. It was the day before the will signing, and if that was when Creighton made his move, the area would still be jumping with traces, and there were none.

So where does that leave me? A hypothetical third will, leaving the money to Pat, and wiped out when Despard—or Honeywell—tampered by killing Wadsworth before the will was made. Yeah. It had to be—or did it?

Into the module. Then, crouched once more in the closet off Wadsworth's bedroom, I watched. It was point 50 on my flow chart, the hour of the billionaire's death.

Wadsworth died alone, and no traces. I scanned for a week before. No traces. What the hell was going on?

Back in my suite, thinking. The ashtray was overflowing onto the floor and I was down to my last cigarette. Then I had another crazy idea.

If Pat isn't Honeywell, maybe she's the other look-alike—her mother. Impossible? I've seen stranger things when people play games with reality.

But that didn't make sense either. If Pat was her own mother, why would she sign a will leaving almost nothing to little Patricia? No motive again.

Then it hit me. Hard. I crushed out my cigarette and paced the room. Of course . . . of course. There's one more pair of look-alikes

in this caper: Pat's mother and Linda Honeywell. Yeah.

I put on my realtime clothes and headed back to the present. Things were coming together at last.

FIFTEEN

"Sweetie," I said to Pat after the greetings and explanations were over, "how would you like to take a trip with me in my module?"

"Sounds super. Where?"

"When. To your parents' wedding, thirty years ago."

"I'd love to, but why?"

"Because this time around I don't think it's your mother who'll be there. It's Linda Honeywell. Despard outfoxed me and violated the Simplicity Principle. He had Honeywell marry your father twice. The second time we already know about, but he also had her go back and become your father's first wife, then had that original will made, knowing I'd pick it up and be completely misled."

"But why haven't you found any traces?"

"Because my computer goofed. Most tampering is done in the immediate past. Trips of more than a decade are rare—too many variables. But Creighton's tampering was back at the original wedding. Honeywell spent a few years with your father, then disappeared conveniently during that so-called accident on your father's yacht. That's when Creighton picked her up and got her hired years later as a nurse. No other tampering was necessary. Your father fell for Honeywell because she was the very same girl he had married before."

Pat sat quietly, thinking it over. "Brilliant," she said. Then her eyebrows jumped. "Does this mean Linda Honeywell is my mother?"

"No. She almost was, but you were away on your vacation when Despard made his move so you haven't changed. She's just a look-alike, that's all."

"But if he made his move *after* my father died, how could Honeywell marry my father the second time without tampering?"

"Easy. It all happened while you were away. When Creighton picked her up from the yacht, it was already the altered sequence. He brought her to about a month before she was hired as your father's nurse, and by the time I got there the traces were gone."

"That's the way it works?"

"Yeah. Traces fade. But I never suspected Creighton was clever enough to work it out. Most people don't know that much about this

business. That's why the computer was fooled. The Simplicity Principle is wired into it."

"What's your next move?"

"Our next move. I'm going to that wedding and you're going with me. If the bride is Honeywell, you'll know it."

"Can't you just look for traces?"

"No. Despard's too smart. He probably brought her into the past well before the wedding, and by the time of the ceremony the traces will be gone."

"When do we leave?"

"Right now. My module's parked out back in the alley."

"I don't have anything to wear for a wedding."

"No problem. We'll stop off on the way and get outfitted. I'm rich in the past. Money is no object."

She reached for her purse. "It's not every day a girl gets to attend her parents' wedding. Let's see this module of yours."

SIXTEEN

Pat started laughing, right there in the alley.

"What's so funny?"

"That's it?" She was busting a gut. "That's the technological marvel of the age?"

"Yup," I said, patting the old bucket of bolts. "This baby's taken me all over reality—and then some—and it's never let me down."

"But it looks like a garbage can!"

"Exactly. Can you think of a better way to disguise it? Why do you think I always live and work in places with convenient alleys?"

She was still roaring. "Doesn't anyone ever throw garbage in it?"

"Yeah," I admitted. "That's happened once or twice. But I never have to worry about it being stolen."

She shook her head in disbelief.

"Climb in, Sweetie. It'll be tight with that big purse of yours, but we'll make it."

She laughed again. "This is ridiculous."

"All right!" I snapped. I'm sensitive about the old heap. She calmed down. "I'll get in first," I told her, "now you . . . careful, watch your knee . . ."

We managed to fit in, and I placed the lid over us. She giggled all the way, the whole thirty years.

I was uneasy. Not because the module was cramped—that made

the trip interesting—but because of the time we were going to. So much had started then. I was an infant living in an orphanage. Aabner Aabbott was leading his secret life, working out the mysteries of time travel. Wadsworth was a man of fifty, about to marry Linda Honeywell. And somewhere, between realities, Creighton Despard was unleashing his plot to seize the Wadsworth billions.

The module came to a halt. We robbed a bank, got some clothes, then headed for the wedding.

SEVENTEEN

It was one of those old churches, the kind with old, very rich congregations. High, vaulted roof, yards of stained glass, uncompromising wooden pews. Yeah. Enough religious atmosphere to delight an acre of ecclesiastics. It looked like any minute the Archbishop of Canterbury and a squad of angels would pop out of the woodwork and fly around the rafters.

The place was packed. Organ music, choir, flowers everywhere—the whole works. We arrived just at the end and managed to find standing room in the back.

"You may kiss the bride," intoned the ornately robed priest. Up came the bride's veil—this time it was white—and once again I felt the shock I first experienced at Wadsworth's funeral.

It was Pat's face. Wadsworth kissed her, the music swelled, and then they led the procession down the aisle to the back of the church where Pat and I stood watching.

It was eerie how much they resembled each other. No doubt about it. That dame in the white gown was the same one I had been seeing at every point on the flow chart. My hunch was right. It was Linda Honeywell.

They spilled by us without making eye contact. Flash bulbs were popping all over the place. It was a big society wedding. Crowds swirled around the steps of the church as Pat and I made our exit. All eyes were on the happy bride and groom. No one noticed us—or maybe they did. No matter. Time is full of little quirks.

We slipped away to the module and went to my hotel suite to change. Then I took Pat out to dinner in a swank place. What the hell, I was spending money out of the past. Might as well live it up.

The menu was in French. Pat ordered. I had no idea what I was eating but it was good.

"Well?" I asked her, as we finished the main course.

"What did your instruments say?"

"Nothing, just like I thought. Despard brought her to that time months before, long enough for the traces to die down." I lit a cigarette. "Was that your mother?"

"It's hard to be certain. I was so young when she died. Most of what I remember is photographs and home movies. That *could* have been Mother." She looked annoyed at my cigarette so I put it out. "I don't know," she added. "Anyway, it was Honeywell."

"Yeah. And there's no point studying your family pictures any more. They're all of her now."

"So where does that leave us?"

"We're almost there. We know the guilty people. We know exactly what they did, and why. All I need now is the moment, the actual crime. For that, I need to make another flow chart. Then I can set reality right again." Something else was bothering me, way at the edge of my mind. If Wadsworth married Honeywell, they would have had a daughter other than Pat, wouldn't they? Two Patricias? Impossible. This was the only one.

Pat looked at me questioningly.

"I need to get back to my computer, sweetie."

"Now?"

"Yeah. Let's finish up. There's still a detail or two I need to work on."

"Can't we spend the night here? You've got that lovely suite, all paid for and going to waste . . ."

She had a good point. What the hell. It could keep until tomorrow. I ordered brandy and we drank a toast, to our last night before reality.

EIGHTEEN

Things looked different as we climbed out of the module in the alley behind my office. The place was loaded with trash, piles of junk everywhere, lots more garbage cans than there had been before. I made a mental note to look for a new office as soon as I was paid for this job. The neighborhood was really getting run down.

We hauled our stuff out of the old bucket, my instruments, Pat's purse. Then Pat tried to smooth the creases from her outfit.

"It's ruined," she muttered, "and I don't have any more clean clothes. Everything is still at my place."

"It doesn't matter," I told her. "You can hang around in that. This

job won't last another day and then you can buy yourself a mountain of new clothes."

"Do you think it would be safe if I went home to get a few things? In case your work takes a little longer?"

What could I say? Things had already taken far longer than I expected, and she had brought almost nothing with her when she left her torn-up apartment. "Well, I guess it's safe. I doubt if Creighton's there waiting for you."

"All right. I'll hurry over and pack a bag for another couple of days, then I'll wait for you at your place."

She didn't seem too confident that I'd restore reality any time soon. "Okay, but don't take any chances. Get in and get out. Creighton is a dangerous man."

"I know." She kissed me, we walked to the front of the building, and we parted. As I went inside, I couldn't help thinking that we might have just kissed for the last time.

The interior of the building seemed a little bit odd, yet it was nothing I could put my finger on. But when I got to the door of my office, I knew something had definitely changed. Something big.

The door said BEN HARDY, PRIVATE INVESTIGATOR. Not *temporal* investigator. Private. I went inside. There was no computer. No causal flow chart on the wall.

The furniture was the same. I went through the desk. Everything was the way I remembered it, even the bottle of booze and the shot glass. It was my office, all right, but not my reality. Not even close.

I went to the book shelf, took down my almanac and started flipping pages. What I was looking for wasn't there. Then I realized what had happened.

I sat down at my desk, lit up a cigarette, and did some of the hardest thinking of my life. It isn't easy to admit your mistakes, but I didn't have much choice. When I make a mistake, it's a big one.

I knew exactly what I had to do, so I did it. By then it was late afternoon. It was Sunday. The building was quiet. I sat back and waited.

There was a knock at the door.

NINETEEN

The door opened and in walked Pat and Despard, right on schedule.

"What a surprise," I said.

Pat was holding a gun. It was pointed at me. I stayed in my seat.

"Notice anything different?" she asked.

"Yeah." My glance flickered to Despard, then back to Pat. "Does this mean we're not dating any more?"

"Don't be coy, Mr. Hardy," said Despard. "Just give us what we want and no harm will come to you."

"What are looking for?"

"The keys to your time machine."

"Why don't you use your own?"

He smiled smugly. "I lost it, Mr. Hardy."

"Really? How unfortunate. What happened?" I was stalling, hoping he'd enjoy rubbing my face in my stupidity, even as I gently japed his pomposity.

"While you and Patricia were visiting in the past, watching her parents' wedding, I too was in the past, about five years ahead of you."

"Indeed," I remarked. "That would be around the time when Aab-bott announced his invention of time travel."

Despard grinned. His teeth were very small. "Exactly. And while I was there, I did a very naughty thing, Mr. Hardy."

"And what was that?"

His grin became wider. "I killed Aabner Aabbott. Unfortunately, it was the day *before* he told the world about his discovery, so you see . . ." He made a gesture with his hands.

"But surely," I interrupted, "his machine must have survived. Pat's father would have stepped in and made the announcement himself. You couldn't have changed that much."

"Oh, but I did. I used a bomb, you see. His whole house was destroyed, and all that was in it." He took a breath. "There are no more time machines," he added. "At least, none existing from that moment forward."

"But mine exists."

"Yes. You were in the past five years before the bomb, so yours was spared. It's the only one in the world."

"What happened to yours?"

Despard shrugged. At least I think that's what he did. His shoulders were so narrow it's hard to be certain. "Mine was changed away, naturally. After all, I was outside of it watching the bomb go off. I had to stay to be sure I did a thorough job."

Temporal suicide! "You knew you wouldn't be able to get away? That reality would change, and you with it?"

"Precisely, Mr. Hardy. Of course, Patricia here . . ." He put one of his toad's arms around her. I cringed. She didn't. "Patricia was with you, and her memory remained intact, as did yours. She was carrying films of the two of us discussing the plot, so that it could be revealed to me today."

I thought of that big purse Pat brought to the past. Yeah. And how anxious she was to get away as soon as we returned.

Pat was standing beside Despard, still pointing the gun at me. "I went to Creighton's house," she explained, "and showed him the films. Now he knows everything."

Yeah. They must have had an interesting day together. I looked at Despard. He knew what I was thinking. "You're just now learning your rôle in this thing?" I asked.

"Yes," he smirked. "But now that I've learned it, I like it. I like it very much. Just imagine—Patricia and I will have the only time machine in existence. In this reality no one even suspects that such a thing is possible. I myself am a bit amazed by it all, but I shall adjust. Anyone can adjust to being ruler of the world, don't you think?"

No. I didn't think. No one can handle such power. I know. I've seen several madmen try. But nothing quite as diabolical as this. "How did you do it?" I asked. "You really had me fooled." *Time, time. I needed time.*

"As I now understand it," Despard expounded, "it was quite a devious plan, and it was mostly mine. Between Patricia and myself, we had access to the archives of Aabbott's discoveries. Naturally, I don't recall working things out, but Patricia and her films have explained it to me. I was ingenious, if I do say so myself."

"What did you do?"

Despard sighed, savoring the moment. "I tricked you into believing I had tampered with reality, when actually I had not."

"So that's why there were no traces?"

"Yes. I knew that Patricia was being disinherited by her father. She was a spoiled child, willful, disrespectful, and rather . . . ah, free with her affections. Her father wouldn't change his will and she hated him for it, so she came to me for solace."

I looked at her. *Pat, Pat. How could you?* Her eyes were steady. The barrel of the gun never wavered.

"And so," Despard continued, "I devised a plan to trick you—oh, yes, we picked you out well in advance—into believing that a reality change had taken place. I knew that you would find no traces, so I planted other clues to keep you from seeing the truth."

"Like that note in the closet?"

"Yes. That was our first overt step. Everything hinged on that day. Patricia pretended to be a nurse, and I hid the note for you to find. Had you not found it, we could have gone no further. But at the end of that day when the note was missing, I knew our plan was working, that in the future, after her father's death, then her vacation—which I paid for—and the court battle—which we both knew she would lose—you would fall for our story and come back to find that little piece of paper, and that it would goad you into thinking that I had tampered with time."

"Very clever," I remarked. It was clever. It was all done in real-time, and it worked. "And later on, when you spotted me at the funeral . . ."

"Certainly. Patricia and I were delighted to see you. That told us our plan was working splendidly, and that eventually, after chasing enough wild geese, you would take Patricia to her parents' wedding. And at last, when I saw the two of you leaving yesterday, I set out to destroy Aabner Aabbott."

I turned to Pat. "Why? Why did you do it?"

"For the money," she said crisply. "And for power."

I thought back to our first night together. "You can do anything," she had said. "Change anything. You can have anything you want in the whole world." Yeah. She told me what she was all about, and I had been too dumb to see it. Money and power: the strongest motives in the world. No wonder Pat's father didn't want to leave her anything. Pat said he was weak, he believed in following the rules—impossible rules, like true love. He knew his Patricia. Boy did he know her.

"How . . . how could you marry your own father?" It was just dawning on me what I was dealing with.

"It was necessary," she replied indifferently.

"And after he died and you took your vacation, you married Creighton—as Honeywell—went through the trial, and following that, Linda Honeywell could mysteriously and conveniently be allowed to disappear."

"That's right," she agreed. "Then I hired you and you believed everything, just as we planned. I tore up my apartment too. You're easy, Ben."

I rested my head in my hands, staring vacantly at the top of my desk. I had liked her, really liked her. But I hadn't known her. Not at all. I looked up. Her eyes seemed to soften, just for a moment.

"So now, Mr. Hardy," said Despard, "if you'll be so kind as to hand

over the keys, Patricia and I will be on our way—to rule the world together. It wouldn't do to leave the world's only time machine in the hands of a fool like you."

Then, quite unexpectedly, Pat turned to Creighton, pulled the trigger, and blew off the top of his head.

TWENTY

"You're full of little surprises," I said.

"Is it surprising that I prefer you to Creighton?"

"But originally, it was the two of you."

"Yes. Before I met you."

"You're very adaptable."

"That's why we get along so well. Adaptability is your main talent."

"And betrayal is yours." I turned to look at Creighton's brains, slowly trickling down the wall. The sound of the shot had died away. Probably no one was around to hear it.

"I'll be good to you, Ben." A note of urgency crept into Pat's voice.

"Yeah. Is that what you whispered to your father? And Creighton too?"

"I love you, Ben."

"It won't work, Pat."

"Why not?"

"Too many loops, sweetie. Haven't you figured it out yet?"

"What are you talking about?"

"Coincidences. Little ones. A whole lot of them. For instance, why do you resemble your mother so much? Ever try to figure that out? And how is it that your father—of all people—happened to be the one who teamed up with Aabbott thirty years ago, the same time your mother came into his life, just when Aabbott himself seemed to come out of nowhere? And why did your mother vanish five years after you were born, when Aabbott also disappeared?"

"What are you saying?"

"How about the coincidence that I'm thirty years old, and came into the world around the same time your father met Aabbott and your mother? And the coincidence that Aabbott endowed the very orphanage where I was growing up?"

"Ben—"

"And why aren't there two Patricias? Honeywell and Wadsworth would have had a daughter, but she wouldn't have been you. You're

supposed to be the result of the original sequence. So where's the other Pat, the one from the altered reality? Are you beginning to see it, Pat? You, your mother, your mother's child—you're all the same person. The same reality. And before you married Wadsworth you had one other child—a boy—who grew up in an orphanage and later became a temporal investigator, met you, and became his own father."

"No!"

"Yes, sweetie. Get it now? You'll become pregnant, if you aren't already. We take my module thirty years into the past. You'll bear our son, Ben, and we'll leave him in an orphanage—I'll show you the one. Then you meet Wadsworth, marry him, persuade him to finance Aabbott. We probably continue our affair all the while. A few years later you have a daughter, named Patricia. Maybe I'll be the father of that one too. One Pat; one reality. Then Aabbott announces his discovery, donates his share to the Foundation which endows the orphanage where little Ben is growing up, you stay with Wadsworth a few more years to take care of little Patricia. You make that will so she grows up discontented enough to seduce Despard and start things all over again. One day you take a cruise and vanish. That's the same time Aabbott disappears, right?"

"Aabbott?"

"Sure. Who do you think he is, anyway?"

She stared at me.

"I'm Aabbott, sweetie. Not the one Creighton killed, but the one the world knows. Someone has to take his place now, so time travel can be invented. Everyone's been wondering how he was able to do it. Now we know. All I have to do is copy my module. It's all lovely, Pat. Really lovely."

She dazedly settled into a chair. I reached over and took the gun from her limp fingers.

"See how neatly everything fits together?" I went on. "You introduce the original Aabbott to Wadsworth to get his financial backing. I'll replace him after Creighton's bomb. Wadsworth won't know one bearded eccentric from another. And he'll never dream that we're lovers, that we have been for years, for whole loops of years."

I paused and studied Pat. The truth was getting through to her.

"We're our own parents?"

"Sure—well, maybe Wadsworth is your father and Creighton is the father of the son you're carrying now. Who cares, it's all in the family. Your children grow up to be you and me, the brother-sister team who bring time travel into the world and cause all reality to

loop forever. You, me, Wadsworth, Creighton—there's no end to it."

"But each time we finally go away. Aabbott and my mother disappear together. It'll be just the two of us. We'll be happy. We must have done it a hundred times before. We can go on doing it forever. Think of it, Ben."

"Not this time, sweetie. Would I be happy with a woman who married her own father—twice? And what about Creighton? That poor slob—he loved you, Pat. Loved you enough to go on a suicide mission, trusting that you'd return with me and resurrect him in a new reality. He believed you. He was willing to die and take a whole universe with him, trusting that you would return to him."

"Ben—" She coughed.

"But when you came back you no longer needed him. He was essential before. He gave you access to your father so you could sneak into his life as Linda Honeywell. He helped you with the planning so you could violate the Simplicity Principle. And he was crazy enough to throw that bomb at Aabbott's house and watch a whole universe be annihilated. But now look at him lying there, the poor dead slob. That's his reward for loving you."

She coughed again.

"You didn't have to kill him. You could have stayed with me and left him alone in this reality. He didn't know anything until you showed him those films. Maybe that's what happened before, all those prior loops. We got back from the wedding and you decided not to bother with Creighton. We figured things out and we went off together to carry out our destiny. But not this time, Pat. My eyes are open. I see you, my child, my mother. I see you for what you really are: Electra, Jocasta, Antigone, Lady Macbeth—you're all of them and more. And I don't like you."

Cough. "We're here, Ben. However we got here, whatever I've done, we're together. We can still—" She coughed again.

"Something wrong?"

"I love you, Ben." Cough, cough.

"It'll get worse, Pat, my sister, my lover. Much worse."

Cough. "What's happening?"

"It's all around you. Tasteless, colorless, odorless. Poisonous, too."

Her breathing was labored, her face red. "What have you done?" Cough, cough.

"When I saw that things were changed, I looked in my almanac. There was no mention of Aabner Aabbott, and that told me all I needed to know. I had to protect my module, so I filled the room with gas and took the antidote." I looked at my watch. "It won't be much

longer now."

Her eyes bulged, her mouth twisted in pain. "Ben, don't do this—"cough"—don't let me die—"cough"—if I die, how will we be born? I love you—" Her words were choked off by a fit of coughing. "Sorry, sweetie."

Her features became contorted with rage. "Creighton was right. You are a fool. You'll destroy all reality—"cough"—damn you! Ben—" She tumbled to the floor beside the lifeless body of Creighton Despard.

I opened the windows to let in fresh air. No one seemed to have heard the gunshot, but that was the least of my problems. With her final words Pat had spoken the truth. She was right about reality.

TWENTY-ONE

I looked at the bodies on the floor. I've seen reality messed up before but never quite as badly as this.

I used to build card houses when I was a kid; spent hours at it. You have to build one carefully, very carefully, and when it's done, if you're good, you can pull some cards out—not too many, yet more than you might think—and the structure still stands. It got so I could make a pyramid seven levels high, resting on the skimpiest understructure you ever saw. Then, slip out one card too many, and down she comes.

In a way, time is like a house of cards. Usually it's tough. It can take a lot of abuse. But at certain key moments it can be a very fragile thing, and right then I knew that my reality was resting on a single card: Aabner Aabbott.

So many crazies have been drawn to Aabbott's life that the fabric of reality around him must be something like the paper you send to some government agency. You've seen what happens to it. They attach something with a staple, then someone else comes along, removes that staple, adds something else, staples that, passes it on to the next clerk who does the same thing, and so on through a daisy chain of paper-pushers until the thing comes back to you—stamped PERMISSION DENIED usually—and the upper left corner has a zillion holes in it, and the paper there is worn so thin it barely holds together.

Well, that's what Aabbott's life must be like by now. All those nuts trying to go back and restore the purity of the original sequence, to wrest time from the hands of the infidels, and other people trying

to keep things as they are, and all the others trying to improve on things, trying to re-shape reality into their own little dreams. Yeah. Aabner Aabbott.

For a moment it occurred to me that I was in a unique position in this reality. I had the world's only time machine. Theoretically, anything was possible for me. A whole universe existed, unsuspecting. It was the dream Pat and Creighton died for.

I shrugged and headed for my module. Being master of the world isn't my style. Temporal investigation is all I know. It's my work and I'm good at it. And now was my chance to prove it.

When I arrived on the lawn of Aabbott's house things seemed calm—unnaturally calm. My instruments registered traces everywhere, the residue of uncounted strikes and counter-strikes at history, each cancelling out the other, but leaving the texture of time brittle, vulnerable. It was a warm summer day, but a chill went through me as I waited, a lone warrior on time's battlefield.

Creighton's module suddenly materialized and out he climbed, fat, clumsy, clutching his homemade bomb—dynamite sticks, wires and alarm clock. He started to tiptoe across the lawn.

"Creighton. Oh, Creighton."

He whirled around, saw me, froze in his tracks.

"You know who I am, Creighton. And you know why I'm here."

He didn't respond, just stood there like a kid caught in the act of shoplifting.

"Go home, Creighton. It isn't going to work. It was a nice try but it's over."

He looked down at his bomb, then back up at me. His eyes were wide, unbelieving. His dreams of glory shattered.

"Pat is waiting for you. In her own way, she loves you. Go home to her." I handed him my contract. "Give her this. She'll know you tried, that you got this far. She'll understand."

Without a word, Creighton Despard turned, climbed into his module, and vanished. I doubt if he knew it but in quitting his mission he restored reality to the condition it was in before he left. The change never happened and now it never would.

Goodbye, Creighton. Next to mine, yours is the strangest tale of any man who ever lived. In a hundred worlds before this—or a million, who knows?—you loved her and lost her and never even remembered that it happened. Then, one world ago, you loved her and she killed you. But that wasn't real either.

Now you'll go home, she'll be waiting for you, the two of you will go on together with Wadsworth's fortune, and you'll never know

how many times it was different, totally different.

You, Creighton, the most unlikely of men, you've won the world's most improbable woman. Reality is the greatest paradox of all.

And where does that leave me?

TWENTY-TWO

I had a few chores to attend to. First to my hotel suite, pack up my clothes, cancel the unused part of my stay, get a refund from the desk clerk. Gather up the rest of my unspent money from the bank robbery, convert everything to gold. Go back to the orphanage where baby Ben is living, make an anonymous donation. What the hell. Aabbott won't become my benefactor for another five years, and nothing I get in the past can ever be taken to the present. That's against the rules.

So here I am, clad in my trenchcoat, puffing a cigarette, back in the days of my infancy. Aabbott's in his house, safely working on his time machine. He'll have to do it himself this time, but it's not impossible. He must have done it once, a hundred loops ago.

And somewhere there's a beautiful girl meeting a wealthy bachelor named Wadsworth. Where she came from I'll never know. Everybody comes from somewhere. Her lovely daughter will grow up, be disinherited, commit incest as Linda Honeywell, inherit her father's money and live happily ever after with Creighton Despard. They'll dream of changing reality and ruling the world with the only time machine in existence, but their dream will come to naught.

And me? My work is done here. This is as close to the original sequence as it's likely to get. I've seen worse patch-up jobs. Time's tough; it'll heal itself. Things are a little sloppy but so what? If it's perfection you're after, you shouldn't be in this business.

For a brief while, a whole eternity really, there was a reality where Aabner Aabbott never invented time travel, where he was an unknown recluse, notable only for his alphabetical primacy. I wonder what that reality would have been like.

So, Ben Hardy. Where are you? What's your role in the great scheme of things? A white corpuscle of the universal body, fighting off invaders, saving one reality, destroying others. Yeah, that's my job. Savior, destroyer.

Did I really destroy Pat's dream? Is reality saved for all time? Maybe not. They can pick a different investigator next time around. I doesn't have to be me. Then what?



Maybe everyone in this business takes his turn looping through reality with Patricia Wadsworth, serving uncountable hitches as Aabner Aabbott, fathering legions of little Patricias who grow up to lead us down time's merry path over and over again. Yeah. Encore. Encore.

Well, I've been there. Let some other guy take my place. Pat won't mind. She's adaptable.

My beautiful Patricia, time's love child, born in reality's whirlpool, lover of a billion self-made men. First cause, unmoved mover. My mother, my daughter, my sister, my lover. O Patricia.

You were time's bumble bee and I was one of your blossoms. Who's the lucky guy in the next reality who sees you walk into his office and say: "I'm Patricia Wadsworth. Perhaps you've heard of me." Yeah. Once or twice. Now and then. Poor bastard. Then he climbs aboard your carousel and takes a trillion trips or so.

Well, I'm getting off. Chalk up one round for free will. Predestination isn't so bad, really. Each loop is its own universe; it never gets boring. Besides, they say you're not a pro in this business until

you've whipped your own grandfather paradox.

So that's that. I've had my identity crisis. I still don't know where I come from, but it isn't too important. I'm real, that's for sure. I've got my work and I'm good at it.

So I guess I'll get into the module and head back to the office. A client may drop in. I hope so. I could use the money.



THIRD ANSWER TO CRACKER'S PARALLEL WORLD

(from page 117)

No number of four or fewer digits can have more than 64 divisors. The first year with this many divisors (including 1 and the number itself) is 7560. It will happen only once again, before the year 10,000, in 9240.

Plato, in Book 5 of *The Laws*, recommends that an ideal city have just 5,040 citizens, each owning a plot of land, because 5,040 has as many as 60 divisors, making it easy to divide the citizens and their property into various equal sets. Plato probably did not know that 7,560 and 9,240 would be better by four divisors.

LETTERS

Letters to the editor (at Box 13116, Philadelphia PA 19101) are always welcome! Please remember, however, that subscriptions—and especially changes of address—do not go there: subscription matters are handled at Box 2650, Greenwich CT 06830. Notices for the SF Conventional Calendar should go to Mr. Strauss at 9850 Fairfax Square #232, Fairfax VA 22031. Books for our book reviewer should be sent directly to Mr. Searles at 56 Eighth Ave., New York NY 10014. Matters for the publisher's other departments—advertising, for example—should be directed to Davis Publications, Inc., 380 Lexington Ave., New York NY 10017.

The editor is generally at the publisher's offices in New York on Tuesdays and Thursdays, but please phone before you drop in (212-557-9100).

—George H. Scithers

Dear George:

It has been brought to my attention by a number of people, including Robert Bussard, that my analysis of the Bussard ramjet (in "On Designing an Interstellar Spaceship") was quite incomplete, leading to a false conclusion.

To this charge I plead guilty. In describing the Bussard ramjet, I made the assumption that the kinetic energy of the incoming protons would be lost, so that as a result the maximum velocity of the ship would be equal to the exhaust velocity—about 12% of the speed of light.

However—and this was a serious oversight on my part—I neglected the possibility that the protons could be collected in a way that would not dissipate their kinetic energy. The nuclear energy released in the fusion reaction would add to the proton kinetic energy and the result would be an exhaust velocity higher than 12% of c . On doing a calculation based on the assumption that all the kinetic energy was saved, I found that now the limiting velocity of the spaceship is equal to the speed of light. This is, indeed, a considerable improvement.

The above result assumes 100% efficiency—that none of the kinetic energy of the collected protons is lost in any way. However, no machine is 100% efficient. There are at least three ways for the protons to lose energy: (1) As the protons are collected by some kind

of field, they lose energy by bremsstrahlung, the emission of electromagnetic energy by any charged particle whose path is curved or deflected in any way. (2) As the protons circulate in the reaction chamber they collide with the electrons of the plasma, and once again bremsstrahlung is emitted. (3) Electron-proton collisions feed energy to the electrons of the plasma, which in turn emit both bremsstrahlung and synchrotron radiation. These radiation mechanisms are not trivial. In any thermonuclear fusion device the balance between the energy produced by the fusion and the energy radiated by bremsstrahlung is what determines the ignition temperature of the reaction. You have to generate more energy than you lose to get a self-sustained reaction.

Rather than pursue the arduous path of calculating the radiation energy loss, I chose a simpler way: assume various amounts of energy loss and then see how that affects the final speed of the spaceship. The result is rather enlightening. Using a completely relativistic calculation, employing nothing more than conservation of energy and momentum, and defining the efficiency factor as the percentage of proton kinetic energy retained in the reaction, I obtain the following results: For 50% efficiency the maximum spaceship velocity rises from $0.12c$ to $0.17c$. For 90% efficiency the maximum velocity goes up to $0.35c$. In other words, if we lose 10% of the kinetic energy of the incoming protons, the maximum velocity of the ship is 35% of the speed of light, at which point the time dilation factor is 1.07. That is, the clocks on the ship will be going 7% more slowly than on earth.

Even if we lose only 1% of the proton energy, the maximum ship velocity is 74% of the speed of light, and the clocks on the ship go 48% slower than on earth.

These results indicate that the ramjet requires an enormously high efficiency if it is going to reach a velocity that will enable the time dilation to have an appreciable effect in extending the range of the voyage. An efficiency of 99.9% gets the ship to 95% of the speed of light, where 1 year on the ship is 3.2 years on earth. The question now is whether such efficiencies are attainable, and this question I cannot answer.

Let me say at this point (in case anyone has gotten the wrong idea) that the wormhole idea I proposed in that article is not to be taken as a serious proposal. The idea was simply raised in fun as a way of exploring what the fundamental equations of physics tell us about the possibilities of interstellar travel.

Concerning my comments on Robert Bussard's proposed fusion

device: I know nothing in detail about the RIGGATRON, having been out of fusion research for many years, and was simply passing along a new item from *Physics Today*, the physicist's newsmagazine. My article was written over a year ago, and I had no way of knowing that Dr. Bussard had in fact begun construction of his device. My comment about the difference between engineering and science fiction stemmed, in part, from my observations that very few plasma devices work as planned. I can cite three examples from Princeton alone of differences between what was expected and what happened when the machine was turned on. For this reason I know that any person undertaking construction of a fusion device must have a great amount of optimism, enthusiasm, and courage. I wish Dr. Bussard well in his endeavor, and will be the first to congratulate him when the RIGGATRON operates successfully.

Best regards

Milton Rothman
553 N. Judson St.
Philadelphia PA 19130

Dear Mr. Scithers:

Thank you for the opportunity to comment on Dr. Milton Rothman's recent article. In respect to the interstellar ramjet it is nice to note that Dr. Rothman's revised conclusion as to maximum ramjet speed is now agreed to be c , the speed of light. Indeed this will be attainable only if the initial energy of the collected protons is preserved in their collection, fusion reaction, and subsequent expulsion (as α -particles) for thrust. The principal loss mechanism in collection is synchrotron radiation in the collection scoop field. Limitations on ramjet speed due to this loss process have been analyzed by several authors since publication (in 1960) of my original paper. The results showed that the machine could accelerate asymptotically only to some speed slightly below c , such that the practical radius of operation of the ship would be limited to a few hundred to a thousand light years in a few decades of shipboard time. This is probably enough space to keep us busy for awhile. Another source of losses is from the fusion reactor itself. This was touched upon in my 1960 paper through the parameter η , there defined as the fraction of fusion reaction energy converted to exhaust kinetic energy. A value $\eta = 0.7$ was used in the original analysis. In conclusion on this issue, two comments are worth mention: (1) While the *technology* for the ramjet engine does not exist today (nor did it in 1960), *no new physical principles or knowledge* are necessary for its even-

tual construction—only improved engineering and; (2) The first successful steam engine (by Simon Newcomen, ca. 1740) operated at about 0.1% efficiency; technology does advance with time and money.

In respect to the RIGGATRON fusion power concept it is a pity that Dr. Rothman chose to attack it from a position of little knowledge; it is really a rather interesting gadget. The RIGGATRON reactor is a happy marriage of state-of-the-art aerospace technologies, through a novel but simple design approach, to the world-proven plasma confinement principle of the tokamak. No science fiction here; just sensible engineering/economics. The high level plasma science of the main government-funded fusion labs (including Princeton) provides excellent base information for confinement physics, but not much for engineering of practical reactors. The fact that plasma physics experiments of the past did not always work as planned is a natural consequence of the poorly understood nature of the field in its early decades. Precisely because of all these research experiments, to which Dr. Rothman contributed, we now *do* understand plasma confinement and heating well enough to undertake engineering development and demonstration in RIGGATRON machines. That is exactly what we are doing; not conducting plasma device physics studies. I thank Dr. Rothman for his good wishes and will look forward to the day when, via ramjet, we might discuss all of these issues together on Beta Crucis 4!

Sincerely yours,

Robert W. Bussard
President, INESCO, Inc.
La Jolla CA

Dear George, Shawna, et. al:

Bless thy hearts and clavicles (and other diverse parts) for publishing Avram Davidson's "Peregrine Perplexed" in the October issue of *IA'sfm*.

Even though baroque SF is obviously not The Good Doctor's cup of tea, it is the wine of the gods (Jupiter Krapuvius and that gang, what?) to some of us.

I must admit that, on thumbing through the October issue and seeing the length of "Peregrine Perplexed," I was a bit apprehensive. What if it should turn out to be another of those awful "Horny Hake" things, or worse yet, an interminable saga of Baraboo? Not even Tim Kirk's delightful art calmed my wim-wams until I started reading.

By the end of the second paragraph, I was snickering; by the conclusion of Peregrine's run-in with the fey Sphinx, I was laughing out loud; by the time Smaragderos made his majestic entrance, capped by that marvellous "YOU CALLED?" punch line, I was reduced to a mass of quivering jelly.

The October issue is now firmly ensconced on my "Keep and Re-Read" shelf, and anyone who tries to borrow it or toss it out is in dire danger of immediate annihilation.

Only one question: When and where can one obtain the rest of the Peregrine saga?

Sincerely,

Lynda Carraher
Umatilla OR

There you are! It is entirely possible to approve wholeheartedly of "Peregrine: Perplexed." There are indeed Readers: Unperplexed out there.

—Isaac Asimov

As for the rest of the series, Peregrine: Primus was published in hardback in 1971 by Walker and in paperback by Ace Books; and a novelet, "Peregrine: Aelflandia" appeared in F&SF, August 1973.

—Darrell Schweitzer

Dear Editor:

Time machines, timely scenes
Good Doctor Asimov
Brought us a magazine
Everyone reads.

Since I can't get them here
Psychokinetically
Could I persuade you to
Send me your needs?

Bob Laib
Newberg OR

Yes.

—George H. Scithers

I can't resist including this to show you all how far the double-dactyl virus can spread. Also, it's not bad.

—Isaac Asimov

Dear Sirs,

A few words, late as usual, about the October 1980 issue.

"The Wheels of Dream," by John Ford. He is becoming a very prolific contributor to your magazine. This story shows why. It is very good—in a light-hearted manner. I enjoy the "playful" story as much as the short puns and the more serious works.

Keep up the good work.

"Outsider," by Skip Wall. This was fair to good. I felt the worst part was the ending. It was slightly surprising, yet I felt the hero was taking an easier way out by staying than by hiding. One sequel about after the aliens come would be interesting but not necessary.

The pun in "Smile . . ." was far too weak. Are you having problems getting good puns? Maybe I can return some of mine you have returned. They, also, were rejected as being too weak; but I feel they are a vast improvement over "Smile . . ."

"Touch of the Bear" was well written. I have enjoyed other Pat Murphy stories, elsewhere, and am overjoyed to find her in *IA'sfm*. The only spoiling factor is the playoff between science and fantasy. That is, the contrast of a working time machine and a bear "spirit." I usually don't enjoy the mixture of science fiction and fantasy, if those are really two separate genres.

"Perplexed" is the most accurate title description you have printed yet. I have read no parts of *Peregrine: Primus* or *Peregrine: Secundus*. Hence, I was not familiar with the characters, settings, and locales of "Peregrine: Perplexed." "Perplexed" may fit well in a novel or series, but it does not stand alone.

I read only the first section, by which time I was so confused I quit. I will not read further in a confusing story in hopes it will clear up. Sorry, Avram, I thought what I read stank.

If I assume the best story in the issue is a ten, here is the order of enjoyment and rating.

- 1) "The Wheels of Dream" (10)
- 2) "Touch of the Bear" (7)
- 3) "Outsider" (6)
- 4) "Smile . . ." (3)
- 5) "Peregrine: Perplexed" (0)

Sincerely,

Timothy L. Goehner
7502 E. Coolidge
Scottsdale AZ 85251

It would seem that "Peregrine: Perplexed" is the most controversial

item we have yet published. It certainly has drawn the strongest adverse reactions. Well, "Carmen" was booed at its first performance, and "The Rites of Spring" caused a riot at its first.

—Isaac Asimov

Dear Mr. Scithers:

We will not be renewing our subscription to Isaac Asimov's Science Fiction Magazine. If you will notice the cover of the August 1980 edition, it has a picture of a man and a woman on it with the woman practically naked. Please tell me: what is fiction about that?

We are a family who is trying to teach our family reverence for God, respect for authority, and a decent moral standard.

We found your magazine leaning toward undesirable sexual incidents entwined in the science fiction. So we feel your magazine is not truly what it says it is, as well as being offensive.

Thank you.

Sincerely,

Mrs. Roger Lewis
Eatontown NJ 07724

I am often astonished over the fact that with the enormous problems facing the world, some people think it worthwhile to get exercised over a painting that shows less than you can see any summer day on the streets of New York or Los Angeles.

—Isaac Asimov

Dear Doc, George, & Shawna,

Dr. A, since you are (literally) the front man for this organization, I'll address most of my remarks to you. I will start by saying that I enjoy this magazine at least as much as I have your writings, which make up a substantial portion of my permanent SF collection. Your name on a book cover seems to be a sure guarantee of the contents, and *IA'sfm* is not an exception. The only segment likely to induce risen gorge is the "Letters." It seems to me that, too often, your correspondents confuse their own taste in fiction with objective standards. Granted, not all works published appeal equally to me, but their general quality is apparent if one looks at them objectively. My suggestion to these "critics" is that they open their minds. My reaction to the first of Somtow Sucharitkul's stories in *IA's* was less

than lukewarm, but as I read his successive stories, I found that I was becoming more involved in his "universe" and getting more enjoyment from reading about it.

I have just sent in my renewal. Who (and *why*) is responsible for the odd lengths of your subscription periods? I'd just as soon "re-up" for a 2- or 3 year hitch, but the best I could do was 20 issues, assuming your Circulation Department figures it out. (They didn't provide a box to check for that choice.) I'll continue to subscribe, despite the confusion, since you're not on any newstands around here. Don't feel badly; no other SF magazine is either. I've thought about opening a store for SF books and magazines, but there may be a reason no one has already.

George, I have nothing but compliments for you and your staff. Enclosed is a SASE. Please remit the prescribed rites, rituals, and taboos to be observed.

Shawna, once I do submit some of my works it would help (I think) if you sign any (unthinkable) rejections. Being predominantly Irish-Celtic, I've been in love with you since I first saw your name in the editorial lineup, and Dr. A's comments have only fueled the fire.

I'll go read the magazine now.

Sincerely,

Kevin P. Smith
Milton DE

You're not going to believe this. I had to lean against the wall to keep from falling down when I found out. Although Shawna McCarthy has that name by inheritance and baptismal right (rite?), she happens to be Jewish. And just to confuse the issue further, she looks as red-headedly Irish as her name.

—Isaac Asimov

Actually, nice Jewish girls like me don't get baptized, so the name is mine by inheritance only.

—Shawna McCarthy

Dear Doctor:

Re your reply to Ted White in the October issue letter column, with due respect and awe of yourself as one of my favorite authors, I must say I find your comment both formidable and distasteful.

I don't believe your average SF reader, simply, is your average magazine reader. If small type and double columns will allow more

letters, let alone longer ones, why not? At least for a while and on a trial basis. In fact, if it would also mean more stories per volume of pages allowed, do the whole magazine in small type and double columns! I can always get bifocals if I need them.

Yours truly,

Dory Miller
San Francisco CA

Well, now, there's the decision we must make; and it is a harrowing one indeed. Can we or can we not rely on our readers being forced to buy bifocals without unduly resenting the magazine? As a reluctant user of bifocals, I have decided it is safer not to push them on others. That's called "editorial responsibility."

—Isaac Asimov

To the editors of my favorite magazine:

I have enjoyed *IA'sfm* from the very first issue, but have never written until now. What comment is needed on perfection? But now I feel I must write, because in the story "Outsider" in the October issue, Skip Wall made two errors. His story dealt with the manipulation of large numbers of people through the use of subliminal advertising. His errors were 1) the use of subliminal messages is not illegal in the United States and 2) such subliminals are not a thing of the past, but are part of most printed and televised advertisements we see every day. Most people are like Mr. Wall, and think subliminals were outlawed sometime back in the fifties. This only contributes to their effectiveness, because even if you do see one—and remember, they are designed to not be seen—you think your eyes are playing tricks on you.

"Outsider" would have been a much more powerful story if Mr. Wall had simply done his homework. Just because the science in his science fiction is psychology and not physics or chemistry does not give him the right to be wrong. If he or any of your other readers would like to know more about the use of subliminal messages in modern advertising, I recommend the books by Wilson Key, which are well written and easy to understand with plenty of fascinating examples. The books are out in paperback and should be in the psychology section of any good bookstore.

Sincerely,

Nancy Browne
Champaign IL

If subliminals are indeed used, that might explain a lot. The advertisements for jeans on television must carry a subliminal message "This is nauseating—this is nauseating—" How else to account for the nausea?

—Isaac Asimov

Dear Dr. Asimov,

Here comes a bit of input from a seldom-heard-from quarter: thank you, thank you, thank you, for having your magazine available to be transcribed into Braille. I, for one, have been most dissatisfied with the quality of the last SF magazine recorded for the blind; and am thrilled to bits to receive something I can really dig my fingernails into, so to speak.

When I first heard about *IA'sfm*, I went right out and bought one—just to say I had it—and bribed, cajoled, and hounded people to read it to me. After discovering the quality of work therein, I was doubly thrilled to learn that, for once, a magazine that spoke of more than kinky sex and redecorating flower beds allowed itself to be Brailled. I can't tell you how relieved I am to cancel the trash and read good SF every month.

Even though you mayn't have heard from many of us, I assure you that many of my blind correspondents are devouring the seven-inch-thick stack of yummys every month. Do you have, perhaps, a ring that we could kiss?

Sincerely,

Sheri Wells
Temperance MI

This touches me. I didn't know we had a Braille transcription (Joel doesn't tell me everything) and you have no idea how strongly I approve. —But I don't wear any rings, Sheri. You'll have to make do with lips.

—Isaac Asimov

NEXT ISSUE

The June 8, 1981 issue of *IA'sfm* will present a new story by Barry B. Longyear, "The Portrait of Baron Negay," which examines the method by which humanity creates art—and vice versa. Also in the issue will be work by Ted Reynolds, Gene Wolfe, Milton A. Rothman, Sharon Webb, and much more. On sale May 12, 1981.

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